

Sequence Listing

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Fong, Sherman
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Gerber, Hanspeter
Gerritsen, Mary E.
Goddard, Audrey
Godowski, Paul J.
Grimaldi, J. Christopher
Gurney, Austin L.
Hillan, Kenneth J
Kljavin, Ivar J.
Kuo, Sophia S.
Napier, Mary A.
Pan, James;
Paoni, Nicholas F.
Roy, Margaret Ann
Shelton, David L.
Stewart, Timothy A.
Tumas, Daniel
Williams, P. Mickey
Wood, William I.
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| Trp | Trp | Pro | Leu | Ala | Leu | Ile | Leu | Ala | Thr | Gln | Arg | Ile | Ser | Arg | | | | | |
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| Pro | Ile | Val | Asn | Leu | Phe | Val | Ser | Arg | Asp | Leu | Gly | Gly | Ser | Ser | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Ala | Ala | Thr | Glu | Ala | Val | Ala | Ile | Leu | Thr | Ala | Thr | Tyr | Pro | Val | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Gly | His | Met | Pro | Tyr | Gly | Trp | Leu | Thr | Glu | Ile | Arg | Ala | Val | Tyr | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Pro | Ala | Phe | Asp | Lys | Asn | Asn | Pro | Ser | Asn | Lys | Leu | Val | Ser | Thr | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Ser | Asn | Thr | Val | Thr | Ala | Ala | His | Ile | Lys | Lys | Phe | Thr | Phe | Val | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Cys | Met | Ala | Leu | Ser | Leu | Thr | Leu | Cys | Phe | Val | Met | Phe | Trp | Thr | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Asn | Val | Ser | Glu | Lys | Ile | Leu | Ile | Asp | Ile | Ile | Gly | Val | Asp |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Phe | Ala | Phe | Ala | Glu | Leu | Cys | Val | Val | Pro | Leu | Arg | Ile | Phe | Ser |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Phe | Phe | Pro | Val | Pro | Val | Thr | Val | Arg | Ala | His | Leu | Thr | Gly | Trp |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Leu | Met | Thr | Leu | Lys | Lys | Thr | Phe | Val | Leu | Ala | Pro | Ser | Ser | Val |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Leu | Arg | Ile | Ile | Val | Leu | Ile | Ala | Ser | Leu | Val | Val | Leu | Pro | Tyr |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Leu | Gly | Val | His | Gly | Ala | Thr | Leu | Gly | Val | Gly | Ser | Leu | Leu | Ala |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Gly | Phe | Val | Gly | Glu | Ser | Thr | Met | Val | Ala | Ile | Ala | Ala | Cys | Tyr |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Val | Tyr | Arg | Lys | Gln | Lys | Lys | Lys | Met | Glu | Asn | Glu | Ser | Ala | Thr |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Glu | Gly | Glu | Asp | Ser | Ala | Met | Thr | Asp | Met | Pro | Pro | Thr | Glu | Glu |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Val | Thr | Asp | Ile | Val | Glu | Met | Arg | Glu | Glu | Asn | Glu | | | |
| | | | | 485 | | | | | 490 | | | | | |

<210> 8
 <211> 535
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 33, 66, 96, 387
 <223> unknown base

<400> 8
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 tgagcttctg gtgcnttttg gctctaattc tggccacaca gagaancagt 100
 cggcctattg tcaacctctt tgtttcccg gaccttggtg gcagttctgc 150
 agccacagag gcagtggcga ttttgacagc cacataccct gtgggtcaca 200
 tgccatacgg ctggttgacg gaaatccgtg ctgtgtatcc tgctttcgac 250
 aagaataacc ccagcaacaa actggtgagc acgagcaaca cagtcacggc 300
 ggccacatc aagaagttca ccttcgtctg catggctctg tcaactcacgc 350
 tctgtttcgt gatgttttgg acacccaacg tgtctgngaa aatcttgata 400
 gacatcatcg gagtggactt tgcctttgca gaactctgtg ttgttccttt 450

gcggatcttc tccttcttcc cagttccagt cacagtgagg gcgcatctca 500

ccgggtggct gatgacactg aagaaaacct tcgtc 535

<210> 9

<211> 434

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 32, 54, 80, 111, 117, 122, 139, 193, 205, 221, 226, 228, 273, 293, 296, 305, 336, 358, 361

<223> unknown base

<400> 9

tgacggaatc ccgggctggg tatcctgggt tngacaagat aaacccccag 50

caanaaattg gggagcaggg caaaacagtn acgggcagcc cacatcaaga 100

agttcacctt ngtttgnatg gntctgtcaa ctcacgctnt gtttcgtgat 150

gttttgagca cccaaagtgt ttgagaaaat tttgatagac atnatcggag 200

tggantttgc ctttgcagaa ntttgngntg ttcctttgcg gattttctcc 250

tttttcccag ttccagtcac agngagggcg catctcaccg ggnggntgat 300

gacantgaag aaaacctttg tccttgcccc cagctntttg gtgcggatca 350

ttgtcctnat ngccagcctt gtggctctac cctacctggg ggtgcacggt 400

gcgaccctgg gcgtgggttc cctcctggcg ggca 434

<210> 10

<211> 154

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 33, 49, 68, 83, 90, 98, 119

<223> unknown base

<400> 10

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acactgaaga aaaccttngt ccttgcccc agntttgtgn tgcgatnat 100

cgctctcatc gccagcctng tggctctacc ctacctgggg gtgcacggtg 150

agac 154

<210> 11

<211> 24

<212> DNA

<213> Artificial Sequence

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<220>
<223> Synthetic oligonucleotide probe

<400> 11
ctgatccggt tcttggtgcc cctg 24

<210> 12
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 12
gctctgtcac tcacgctc 18

<210> 13
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 13
tcattctcttc cctctccc 18

<210> 14
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 14
ccttccgcca cggagttc 18

<210> 15
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 15
ggcaaagtcc actccgatga tgct 24

<210> 16
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

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<400> 16
gcctgctgtg gtcacaggtc tccg 24

<210> 17
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 17
tcggggagca ggccttgaac cggggcattg ctgctgtcaa ggagg 45

<210> 18
<211> 1901
<212> DNA
<213> Homo sapiens

<400> 18
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ctctgcccc tgcatcctgt gcagctgctg ccccgccagc cgcaactcca 150
ccgtgagccg cctcatcttc acgttcttcc tcttctctggg ggtgctgggtg 200
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ttaagttcct gatcctggtg ggcctcaccg tgggtgcctt ctacatccct 500
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tacgcaggcc tcttcttctt cactctcttc ttctacttgc tgtcgatcgc 700
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gctgcaggcc tcggtcatca ccctctacac catgtttgtc acctggtcag 900
ccctatccag tatccctgaa cagaaatgca acccccattt gccaaaccag 950

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gcaggtggca gcctgtgagg gccgggcctt tgacaacgag caggacggcg 1200
tcacctacag ctactccttc ttccacttct gcctggtgct ggcctcactg 1250
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ctgagtctct aagacttttt ctaataaaca agccagtgcg tgtaaaaaaa 1900
a 1901

<210> 19

<211> 457

<212> PRT

<213> Homo sapiens

<400> 19

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Ala | Cys | Leu | Gly | Ala | Cys | Ser | Leu | Leu | Ser | Cys | Ala | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Cys | Leu | Cys | Gly | Ser | Ala | Pro | Cys | Ile | Leu | Cys | Ser | Cys | Cys | Pro |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ala | Ser | Arg | Asn | Ser | Thr | Val | Ser | Arg | Leu | Ile | Phe | Thr | Phe | Phe |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Phe | Leu | Gly | Val | Leu | Val | Ser | Ile | Ile | Met | Leu | Ser | Pro | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Val | Glu | Ser | Gln | Leu | Tyr | Lys | Leu | Pro | Trp | Val | Cys | Glu | Glu | Gly | | 65 | 70 | 75 |
| Ala | Gly | Ile | Pro | Thr | Val | Leu | Gln | Gly | His | Ile | Asp | Cys | Gly | Ser | | 80 | 85 | 90 |
| Leu | Leu | Gly | Tyr | Arg | Ala | Val | Tyr | Arg | Met | Cys | Phe | Ala | Thr | Ala | | 95 | 100 | 105 |
| Ala | Phe | Phe | Phe | Phe | Phe | Phe | Thr | Leu | Leu | Met | Leu | Cys | Val | Ser | | 110 | 115 | 120 |
| Ser | Ser | Arg | Asp | Pro | Arg | Ala | Ala | Ile | Gln | Asn | Gly | Phe | Trp | Phe | | 125 | 130 | 135 |
| Phe | Lys | Phe | Leu | Ile | Leu | Val | Gly | Leu | Thr | Val | Gly | Ala | Phe | Tyr | | 140 | 145 | 150 |
| Ile | Pro | Asp | Gly | Ser | Phe | Thr | Asn | Ile | Trp | Phe | Tyr | Phe | Gly | Val | | 155 | 160 | 165 |
| Val | Gly | Ser | Phe | Leu | Phe | Ile | Leu | Ile | Gln | Leu | Val | Leu | Leu | Ile | | 170 | 175 | 180 |
| Asp | Phe | Ala | His | Ser | Trp | Asn | Gln | Arg | Trp | Leu | Gly | Lys | Ala | Glu | | 185 | 190 | 195 |
| Glu | Cys | Asp | Ser | Arg | Ala | Trp | Tyr | Ala | Gly | Leu | Phe | Phe | Phe | Thr | | 200 | 205 | 210 |
| Leu | Leu | Phe | Tyr | Leu | Leu | Ser | Ile | Ala | Ala | Val | Ala | Leu | Met | Phe | | 215 | 220 | 225 |
| Met | Tyr | Tyr | Thr | Glu | Pro | Ser | Gly | Cys | His | Glu | Gly | Lys | Val | Phe | | 230 | 235 | 240 |
| Ile | Ser | Leu | Asn | Leu | Thr | Phe | Cys | Val | Cys | Val | Ser | Ile | Ala | Ala | | 245 | 250 | 255 |
| Val | Leu | Pro | Lys | Val | Gln | Asp | Ala | Gln | Pro | Asn | Ser | Gly | Leu | Leu | | 260 | 265 | 270 |
| Gln | Ala | Ser | Val | Ile | Thr | Leu | Tyr | Thr | Met | Phe | Val | Thr | Trp | Ser | | 275 | 280 | 285 |
| Ala | Leu | Ser | Ser | Ile | Pro | Glu | Gln | Lys | Cys | Asn | Pro | His | Leu | Pro | | 290 | 295 | 300 |
| Thr | Gln | Leu | Gly | Asn | Glu | Thr | Val | Val | Ala | Gly | Pro | Glu | Gly | Tyr | | 305 | 310 | 315 |
| Glu | Thr | Gln | Trp | Trp | Asp | Ala | Pro | Ser | Ile | Val | Gly | Leu | Ile | Ile | | 320 | 325 | 330 |
| Phe | Leu | Leu | Cys | Thr | Leu | Phe | Ile | Ser | Leu | Arg | Ser | Ser | Asp | His | | 335 | 340 | 345 |
| Arg | Gln | Val | Asn | Ser | Leu | Met | Gln | Thr | Glu | Glu | Cys | Pro | Pro | Met | | | | |


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<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 23
cctgggcaaa aatgcaac 18

<210> 24
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<212> DNA
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<220>
<223> Synthetic oligonucleotide probe

<400> 24
caggaatgta gaaggcaccc acgg 24

<210> 25
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 25
tggcacagat cttcacccac acgg 24

<210> 26
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 26
tgtccatcat tatgctgagc ccgggcgtgg agagtcagct ctacaagctg 50

<210> 27
<211> 1351
<212> DNA
<213> Homo sapiens

<400> 27
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ttaacctggg tcaaatgcac ggattctcac ctgctacagt tacgctctcc 100
cgcggcacgt ccgcgaggac ttgaagtcct gagcgctcaa gtttgtccgt 150
aggtcgagag aaggccatgg aggtgccgcc accggcaccg cggagctttc 200
tctgtagagc attgtgccta tttccccgag tctttgctgc cgaagctgtg 250

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actgcogatt cggaagtcct tgaggagcgt cagaagcggc ttccctacgt 300
 cccagagccc tattaccggg aatctggatg ggaccgcctc cgggagctgt 350
 ttggcaaaga tgaacagcag agaatttcaa aggaccttgc taatatctgt 400
 aagacggcag ctacagcagg catcattggc tgggtgtatg ggggaatacc 450
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 t 1351

<210> 28

<211> 285

<212> PRT

<213> Homo sapiens

<400> 28

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Val | Pro | Pro | Pro | Ala | Pro | Arg | Ser | Phe | Leu | Cys | Arg | Ala |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Cys | Leu | Phe | Pro | Arg | Val | Phe | Ala | Ala | Glu | Ala | Val | Thr | Ala |
| | | | | 20 | | | | 25 | | | | | 30 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Ser | Glu | Val | Leu | Glu | Glu | Arg | Gln | Lys | Arg | Leu | Pro | Tyr | Val | 35 | 40 | 45 |
| Pro | Glu | Pro | Tyr | Tyr | Pro | Glu | Ser | Gly | Trp | Asp | Arg | Leu | Arg | Glu | 50 | 55 | 60 |
| Leu | Phe | Gly | Lys | Asp | Glu | Gln | Gln | Arg | Ile | Ser | Lys | Asp | Leu | Ala | 65 | 70 | 75 |
| Asn | Ile | Cys | Lys | Thr | Ala | Ala | Thr | Ala | Gly | Ile | Ile | Gly | Trp | Val | 80 | 85 | 90 |
| Tyr | Gly | Gly | Ile | Pro | Ala | Phe | Ile | His | Ala | Lys | Gln | Gln | Tyr | Ile | 95 | 100 | 105 |
| Glu | Gln | Ser | Gln | Ala | Glu | Ile | Tyr | His | Asn | Arg | Phe | Asp | Ala | Val | 110 | 115 | 120 |
| Gln | Ser | Ala | His | Arg | Ala | Ala | Thr | Arg | Gly | Phe | Ile | Arg | Tyr | Gly | 125 | 130 | 135 |
| Trp | Arg | Trp | Gly | Trp | Arg | Thr | Ala | Val | Phe | Val | Thr | Ile | Phe | Asn | 140 | 145 | 150 |
| Thr | Val | Asn | Thr | Ser | Leu | Asn | Val | Tyr | Arg | Asn | Lys | Asp | Ala | Leu | 155 | 160 | 165 |
| Ser | His | Phe | Val | Ile | Ala | Gly | Ala | Val | Thr | Gly | Ser | Leu | Phe | Arg | 170 | 175 | 180 |
| Ile | Asn | Val | Gly | Leu | Arg | Gly | Leu | Val | Ala | Gly | Gly | Ile | Ile | Gly | 185 | 190 | 195 |
| Ala | Leu | Leu | Gly | Thr | Pro | Val | Gly | Gly | Leu | Leu | Met | Ala | Phe | Gln | 200 | 205 | 210 |
| Lys | Tyr | Ala | Gly | Glu | Thr | Val | Gln | Glu | Arg | Lys | Gln | Lys | Asp | Arg | 215 | 220 | 225 |
| Lys | Ala | Leu | His | Glu | Leu | Lys | Leu | Glu | Glu | Trp | Lys | Gly | Arg | Leu | 230 | 235 | 240 |
| Gln | Val | Thr | Glu | His | Leu | Pro | Glu | Lys | Ile | Glu | Ser | Ser | Leu | Arg | 245 | 250 | 255 |
| Glu | Asp | Glu | Pro | Glu | Asn | Asp | Ala | Lys | Lys | Ile | Glu | Ala | Leu | Leu | 260 | 265 | 270 |
| Asn | Leu | Pro | Arg | Asn | Pro | Ser | Val | Ile | Asp | Lys | Gln | Asp | Lys | Asp | 275 | 280 | 285 |

<210> 29

<211> 324

<212> DNA

<213> Homo sapiens

<400> 29

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<400> 32
cttgaggagc gtcagaagcg 20

<210> 33
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 33
ataacgaatg aagcctcgtg 20

<210> 34
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 34
gctaatatct gtaagacggc agctacagca ggcatcattg 40

<210> 35
<211> 1819
<212> DNA
<213> Homo sapiens

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gacaaagcag ctgtcaggga acctccgccg gagtcgaatt tacgtgcagc 150
tgccggcaac cacaggttcc aagatggttt gcgggggcctt cgcgtgttcc 200
aagaactgcc tgtgcgccct caacctgctt tacaccttggt ttagtctgct 250
gctaattgga attgctgcgt ggggcattgg cttcgggctg atttccagtc 300
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```


| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ala | Ala | Trp | Gly | Ile | Gly | Phe | Gly | Leu | Ile | Ser | Ser | Leu | Arg | Val | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Val | Gly | Val | Val | Ile | Ala | Val | Gly | Ile | Phe | Leu | Phe | Leu | Ile | Ala | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Leu | Val | Gly | Leu | Ile | Gly | Ala | Val | Lys | His | His | Gln | Val | Leu | Leu | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Phe | Phe | Tyr | Met | Ile | Ile | Leu | Leu | Leu | Val | Phe | Ile | Val | Gln | Phe | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Ser | Val | Ser | Cys | Ala | Cys | Leu | Ala | Leu | Asn | Gln | Glu | Gln | Gln | Gly | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Gln | Leu | Leu | Glu | Val | Gly | Trp | Asn | Asn | Thr | Ala | Ser | Ala | Arg | Asn | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Asp | Ile | Gln | Arg | Asn | Leu | Asn | Cys | Cys | Gly | Phe | Arg | Ser | Val | Asn | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Pro | Asn | Asp | Thr | Cys | Leu | Ala | Ser | Cys | Val | Lys | Ser | Asp | His | Ser | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Cys | Ser | Pro | Cys | Ala | Pro | Ile | Ile | Gly | Glu | Tyr | Ala | Gly | Glu | Val | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Arg | Phe | Val | Gly | Gly | Ile | Gly | Leu | Phe | Phe | Ser | Phe | Thr | Glu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Ile | Leu | Gly | Val | Trp | Leu | Thr | Tyr | Arg | Tyr | Arg | Asn | Gln | Lys | Asp | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Pro | Arg | Ala | Asn | Pro | Ser | Ala | Phe | Leu | | | | | | | |
| | | | | 200 | | | | | | | | | | | |

<210> 37
 <211> 390
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 20, 35, 61, 83, 106, 130, 133, 187, 232, 260, 336
 <223> unknown base

<400> 37
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 tattctgtaa nttgtattta ttgttcagtt ttntgtatct tgcgcttggt 100
 tagccntgaa ccaggagcaa cagggtcagn ttntggaggt tggttggaac 150
 aatacggcaa gtgctcgaaa tgacatccag agaaatntaa actgctgtgg 200
 gttccgaagt gttaacccaa atgacacctg tntggctagc tgtgttaaaa 250
 gtgaccactn gtgctcgcca tgtgctccaa tcataggaga atatgctgga 300

gagggttttga gatttggttg tggcattggc ctgttnttca gttttacaga 350
gatcctgggt gtttggtga cctacagata caggaaccag 390

<210> 38
<211> 566
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 27
<223> unknown base

<400> 38
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ttacaccaat gtattctaga atagtattgt cttaggaaat tgtggtttta 150
tttttgactt ttacaggtaa gtgcaaagga gaagtgggtt catgaaatgt 200
tctaattgat aataacattt accttcagcc tcccatcaga atggaacgag 250
ttttgagtaa tccaggaagt atatctatat gatcttgata ttgttttata 300
taatttgaag tctaaaagac tgcattttta aacaagttag tattaatgcg 350
ttggcccacg tagcaaaaag atatttgatt atcttaaaaa ttgttaaata 400
ccgttttcat gaaagtctc agtattgtaa cagcaacttg tcaaacctaa 450
gcatatttga atatgatctc ccataatttg aaattgaaat cgtatttgtgt 500
ggaggaaatg gcaatcttat gtgtgctgaa ggacacagta agagcaccaa 550
gttgtgcccc acttgc 566

<210> 39
<211> 264
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 84-85, 206
<223> unknown base

<400> 39
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cttgtttagc ccctgaaacc aggagcaaca gggnnacagct tcctggaggt 100
tggttggtgcaa caatcacggc caagtgactc cgcaaagac atcccagaga 150
aatcctaaac tgctgtgggt tccgaagtgt taacccaaat gacacctgtc 200

tggctngctg tggtaaaagt gaccactcgt gctcgccatg tgctccaatc 250
 ataggagaat atgc 264
 <210> 40
 <211> 21
 <212> DNA
 <213> Artificial Sequence
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 <223> Synthetic oligonucleotide probe
 <400> 40
 acccacgtct gcgttgctgc c 21
 <210> 41
 <211> 18
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Synthetic oligonucleotide probe
 <400> 41
 gagaatatgc tggagagg 18
 <210> 42
 <211> 24
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Synthetic oligonucleotide probe
 <400> 42
 aggaatgcac taggattcgc gcgg 24
 <210> 43
 <211> 45
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Synthetic oligonucleotide probe
 <400> 43
 ggccccaaag gcaaggacaa agcagctgtc agggaaacctc cgccg 45
 <210> 44
 <211> 2061
 <212> DNA
 <213> Homo sapiens
 <400> 44
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 tcccttggtg tgctctgggt ggcccagatg ctactggctg ccagttttga 100

gagcgtgcag tgtgagggac ctgtctgcac tgaggagagc agctgccaca 150
 cggaggatga cttgactgat gcaagggaag ctggcttcca ggtcaaggcc 200
 tacactttca gtgaaccctt ccacctgatt gtgtcctatg actggctgat 250
 cctccaaggt ccagccaagc cagtttttga aggggacctg ctggttctgc 300
 gctgccaggc ctggcaagac tggccactga ctcaggtgac cttctaccga 350
 gatggctcag ctctgggtcc ccccgggcct aacagggaat tctccatcac 400
 cgtggtacaa aaggcagaca gcgggcacta ccactgcagt ggcattcttc 450
 agagccctgg tcttgggatc ccagaaacag catctgttgt ggctatcaca 500
 gtccaagaac tgtttccagc gccattctc agagctgtac cctcagctga 550
 accccaagca ggaagcccca tgaccctgag ttgtcagaca aagttgcccc 600
 tgcagaggtc agctgcccgc ctctcttctt ccttctacaa ggatggaagg 650
 atagtgcaaa gcagggggct ctctcagaa ttccagatcc ccacagcttc 700
 agaagatcac tccgggtcat actggtgtga ggcagccact gaggacaacc 750
 aagtttgaa acagagcccc cagctagaga tcagagtga gggtgcttcc 800
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 tccaggaact gctctgagg aggcccttg gcctctgct ccgccgcaa 900
 ccccatcttc tgaggatcca ggcttttctt ctctctggg gatgccagat 950
 cctcatctgt atcaccagat gggccttctt ctcaaacaca tgcaggatgt 1000
 gagagtctc ctcggtcacc tgcctcatga gttgagggaa ttatctggcc 1050
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 ctctctgtcc tgcacatag cataagtact tttacaagtt gtcccagtgt 1200
 tttgttagaa taatgtagtt aggtgagtgt aaataaattt atataaagt 1250
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 tctgctgtct agatcaggaa tttctatctg ttatatcgac cagaatgttg 1350
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ggtgatggca ttaagaagtg ggcctttggg aagtgattag atcaggagtg 1850
cagagccctc atgattagga ttagtgccct tatttaaaaa ggccccagag 1900
agctaactca cccttcacc atatgaggac gtggcaagaa gatgacatgt 1950
atgagaacca aaaaacagct gtcgccaaac accgactctg tcgttgccct 2000
gatcttgaac ttccagcctc cagaactatg agaaataaaa ttctggttgt 2050
ttgtagccta a 2061

<210> 45

<211> 359

<212> PRT

<213> Homo sapiens

<400> 45

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Lys | Leu | Gly | Cys | Val | Leu | Met | Ala | Trp | Ala | Leu | Tyr | Leu | Ser | 1 | 5 | 10 | 15 |
| Leu | Gly | Val | Leu | Trp | Val | Ala | Gln | Met | Leu | Leu | Ala | Ala | Ser | Phe | 20 | 25 | 30 | |
| Glu | Thr | Leu | Gln | Cys | Glu | Gly | Pro | Val | Cys | Thr | Glu | Glu | Ser | Ser | 35 | 40 | 45 | |
| Cys | His | Thr | Glu | Asp | Asp | Leu | Thr | Asp | Ala | Arg | Glu | Ala | Gly | Phe | 50 | 55 | 60 | |
| Gln | Val | Lys | Ala | Tyr | Thr | Phe | Ser | Glu | Pro | Phe | His | Leu | Ile | Val | 65 | 70 | 75 | |
| Ser | Tyr | Asp | Trp | Leu | Ile | Leu | Gln | Gly | Pro | Ala | Lys | Pro | Val | Phe | 80 | 85 | 90 | |
| Glu | Gly | Asp | Leu | Leu | Val | Leu | Arg | Cys | Gln | Ala | Trp | Gln | Asp | Trp | 95 | 100 | 105 | |
| Pro | Leu | Thr | Gln | Val | Thr | Phe | Tyr | Arg | Asp | Gly | Ser | Ala | Leu | Gly | 110 | 115 | 120 | |
| Pro | Pro | Gly | Pro | Asn | Arg | Glu | Phe | Ser | Ile | Thr | Val | Val | Gln | Lys | 125 | 130 | 135 | |
| Ala | Asp | Ser | Gly | His | Tyr | His | Cys | Ser | Gly | Ile | Phe | Gln | Ser | Pro | 140 | 145 | 150 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Pro | Gly | Ile | Pro | Glu | Thr | Ala | Ser | Val | Val | Ala | Ile | Thr | Val | 155 | 160 | 165 |
| Gln | Glu | Leu | Phe | Pro | Ala | Pro | Ile | Leu | Arg | Ala | Val | Pro | Ser | Ala | 170 | 175 | 180 |
| Glu | Pro | Gln | Ala | Gly | Ser | Pro | Met | Thr | Leu | Ser | Cys | Gln | Thr | Lys | 185 | 190 | 195 |
| Leu | Pro | Leu | Gln | Arg | Ser | Ala | Ala | Arg | Leu | Leu | Phe | Ser | Phe | Tyr | 200 | 205 | 210 |
| Lys | Asp | Gly | Arg | Ile | Val | Gln | Ser | Arg | Gly | Leu | Ser | Ser | Glu | Phe | 215 | 220 | 225 |
| Gln | Ile | Pro | Thr | Ala | Ser | Glu | Asp | His | Ser | Gly | Ser | Tyr | Trp | Cys | 230 | 235 | 240 |
| Glu | Ala | Ala | Thr | Glu | Asp | Asn | Gln | Val | Trp | Lys | Gln | Ser | Pro | Gln | 245 | 250 | 255 |
| Leu | Glu | Ile | Arg | Val | Gln | Gly | Ala | Ser | Ser | Ser | Ala | Ala | Pro | Pro | 260 | 265 | 270 |
| Thr | Leu | Asn | Pro | Ala | Pro | Gln | Lys | Ser | Ala | Ala | Pro | Gly | Thr | Ala | 275 | 280 | 285 |
| Pro | Glu | Glu | Ala | Pro | Gly | Pro | Leu | Pro | Pro | Pro | Pro | Thr | Pro | Ser | 290 | 295 | 300 |
| Ser | Glu | Asp | Pro | Gly | Phe | Ser | Ser | Pro | Leu | Gly | Met | Pro | Asp | Pro | 305 | 310 | 315 |
| His | Leu | Tyr | His | Gln | Met | Gly | Leu | Leu | Leu | Lys | His | Met | Gln | Asp | 320 | 325 | 330 |
| Val | Arg | Val | Leu | Leu | Gly | His | Leu | Leu | Met | Glu | Leu | Arg | Glu | Leu | 335 | 340 | 345 |
| Ser | Gly | His | Gln | Lys | Pro | Gly | Thr | Thr | Lys | Ala | Thr | Ala | Glu | | 350 | 355 | |

- <210> 46
- <211> 18
- <212> DNA
- <213> Artificial Sequence
- <220>
- <223> Synthetic oligonucleotide probe
- <400> 46
- tggtgtgtgt cctcatgg 18
- <210> 47
- <211> 18
- <212> DNA
- <213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 47
tttccagcgc caattctc 18

<210> 48
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 48
agttcttgga ctgtgatagc cac 23

<210> 49
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 49
aaacttggtt gtcctcagtg gctg 24

<210> 50
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 50
gtgagggacc tgtctgcact gaggagagca gctgccacac ggagg 45

<210> 51
<211> 2181
<212> DNA
<213> Homo sapiens

<400> 51
cccacgcgtc cgcccacgcg tccgcccacg ggtccgcca cgcgtccggg 50
ccaccagaag tttgagcctc tttggtagca ggaggctgga agaaaggaca 100
gaagtagctc tggctgtgat ggggatctta ctgggcctgc tactcctggg 150
gcacctaaca gtggacactt atggccgtcc catcctggaa gtgccagaga 200
gtgtaacagg accttggaag ggggatgtga atcttcctg cacctatgac 250
cccctgcaag gctacacca agtcttggtg aagtggctgg tacaacgtgg 300
ctcagaccct gtcaccatct ttctacgtga ctcttctgga gaccatatcc 350

agcaggcaaa gtaccagggc cgcctgcatg tgagccacaa ggttccagga 400
 gatgtatccc tccaattgag caccctggag atggatgacc ggagccacta 450
 cacgtgtgaa gtcacctggc agactcctga tggcaaccaa gtcgtgagag 500
 ataagattac tgagctccgt gtccagaaac tctctgtctc caagcccaca 550
 gtgacaactg gcagcgggta tggcttcacg gtgccccagg gaatgaggat 600
 tagccttcaa tgccaggctc ggggttctcc tcccatcagt tatatttggg 650
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 ctttcttcag ggccagacag cttttaattg aaattgttat ttcacaggcc 2100
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 tggtgctcaa taaatatcta atcataacag c 2181

<210> 52

<211> 321

<212> PRT

<213> Homo sapiens

<400> 52

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Ile | Leu | Leu | Gly | Leu | Leu | Leu | Leu | Gly | His | Leu | Thr | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Asp | Thr | Tyr | Gly | Arg | Pro | Ile | Leu | Glu | Val | Pro | Glu | Ser | Val | Thr |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Gly | Pro | Trp | Lys | Gly | Asp | Val | Asn | Leu | Pro | Cys | Thr | Tyr | Asp | Pro |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Gln | Gly | Tyr | Thr | Gln | Val | Leu | Val | Lys | Trp | Leu | Val | Gln | Arg |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Gly | Ser | Asp | Pro | Val | Thr | Ile | Phe | Leu | Arg | Asp | Ser | Ser | Gly | Asp |
| | | | | 65 | | | | | 70 | | | | | 75 |
| His | Ile | Gln | Gln | Ala | Lys | Tyr | Gln | Gly | Arg | Leu | His | Val | Ser | His |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Lys | Val | Pro | Gly | Asp | Val | Ser | Leu | Gln | Leu | Ser | Thr | Leu | Glu | Met |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Asp | Asp | Arg | Ser | His | Tyr | Thr | Cys | Glu | Val | Thr | Trp | Gln | Thr | Pro |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Asp | Gly | Asn | Gln | Val | Val | Arg | Asp | Lys | Ile | Thr | Glu | Leu | Arg | Val |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Gln | Lys | Leu | Ser | Val | Ser | Lys | Pro | Thr | Val | Thr | Thr | Gly | Ser | Gly |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Tyr | Gly | Phe | Thr | Val | Pro | Gln | Gly | Met | Arg | Ile | Ser | Leu | Gln | Cys |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Gln | Ala | Arg | Gly | Ser | Pro | Pro | Ile | Ser | Tyr | Ile | Trp | Tyr | Lys | Gln |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gln | Thr | Asn | Asn | Gln | Glu | Pro | Ile | Lys | Val | Ala | Thr | Leu | Ser | Thr | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Leu | Leu | Phe | Lys | Pro | Ala | Val | Ile | Ala | Asp | Ser | Gly | Ser | Tyr | Phe | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Cys | Thr | Ala | Lys | Gly | Gln | Val | Gly | Ser | Glu | Gln | His | Ser | Asp | Ile | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Val | Lys | Phe | Val | Val | Lys | Asp | Ser | Ser | Lys | Leu | Leu | Lys | Thr | Lys | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Thr | Glu | Ala | Pro | Thr | Thr | Met | Thr | Tyr | Pro | Leu | Lys | Ala | Thr | Ser | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Thr | Val | Lys | Gln | Ser | Trp | Asp | Trp | Thr | Thr | Asp | Met | Asp | Gly | Tyr | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Leu | Gly | Glu | Thr | Ser | Ala | Gly | Pro | Gly | Lys | Ser | Leu | Pro | Val | Phe | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Ala | Ile | Ile | Leu | Ile | Ile | Ser | Leu | Cys | Cys | Met | Val | Val | Phe | Thr | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Met | Ala | Tyr | Ile | Met | Leu | Cys | Arg | Lys | Thr | Ser | Gln | Gln | Glu | His | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Val | Tyr | Glu | Ala | Ala | Arg | | | | | | | | | | |
| | | | | 320 | | | | | | | | | | | |

<210> 53
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 53
 tatccctcca attgagcacc ctgg 24

<210> 54
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 54
 gtcggaagac atcccaacaa g 21

<210> 55
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 55

cttcacaatg togctgtgct gctc 24

<210> 56

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 56

agccaaatcc agcagctggc ttac 24

<210> 57

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 57

tggatgaccg gagccactac acgtgtgaag tcacctggca gactcctgat 50

<210> 58

<211> 2458

<212> DNA

<213> Homo sapiens

<400> 58

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 cgcccggcac atggctgcag ccacctgcg cgcaccccga ggccgcccgc 100
 ccagctcgcc cgaggtccgt cggaggcgcc cggccgcccc ggagccaagc 150
 agcaactgag cggggaagcg cccgcgtccg gggatcgga tgtccctcct 200
 ccttctcctc ttgctagttt cctactatgt tggaaccttg gggactcaca 250
 ctgagatcaa gagagtggca gaggaaaagg tcactttgcc ctgccaccat 300
 caactggggc ttccagaaaa agacactctg gatattgaat ggctgctcac 350
 cgataatgaa gggaacccaa aagtgggtgat cacttactcc agtcgtcatg 400
 tctacaataa cttgactgag gaacagaagg gccgagtggc ctttgcttcc 450
 aatttcctgg caggagatgc ctccctgcag attgaacctc tgaagcccag 500
 tgatgagggc cggtagacct gtaagggttaa gaattcaggg cgctacgtgt 550
 ggagccatgt catcttaaaa gtcttagtga gaccatccaa gcccaagtgt 600
 gagttggaag gagagctgac agaaggaagt gacctgactt tgcagtgtga 650

gtcatcctct ggcacagagc ccattgtgta ttactggcag cgaatccgag 700
 agaaagaggg agaggatgaa cgtctgcctc ccaaacttag gattgactac 750
 aaccaccctg gacgagttct gctgcagaat cttaccatgt cctactctgg 800
 actgtaccag tgcacagcag gcaacgaagc tgggaaggaa agctgtgtgg 850
 tgcgagtaac tgtacagtat gtacaaagca tcggcatggg tgcaggagca 900
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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
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| | | | | 185 | | | | | 190 | | | | | 195 |
| Gln | Asn | Leu | Thr | Met | Ser | Tyr | Ser | Gly | Leu | Tyr | Gln | Cys | Thr | Ala |
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| Gly | Asn | Glu | Ala | Gly | Lys | Glu | Ser | Cys | Val | Val | Arg | Val | Thr | Val |
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| Gln | Tyr | Val | Gln | Ser | Ile | Gly | Met | Val | Ala | Gly | Ala | Val | Thr | Gly |
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| Ile | Val | Ala | Gly | Ala | Leu | Leu | Ile | Phe | Leu | Leu | Val | Trp | Leu | Leu |
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| Ile | Arg | Arg | Lys | Asp | Lys | Glu | Arg | Tyr | Glu | Glu | Glu | Glu | Arg | Pro |
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| Asn | Glu | Ile | Arg | Glu | Asp | Ala | Glu | Ala | Pro | Lys | Ala | Arg | Leu | Val |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Lys | Pro | Ser | Ser | Ser | Ser | Ser | Gly | Ser | Arg | Ser | Ser | Arg | Ser | Gly |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Ser | Ser | Ser | Thr | Arg | Ser | Thr | Ala | Asn | Ser | Ala | Ser | Arg | Ser | Gln |
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| Arg | Thr | Leu | Ser | Thr | Asp | Ala | Ala | Pro | Gln | Pro | Gly | Leu | Ala | Thr |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Gln | Ala | Tyr | Ser | Leu | Val | Gly | Pro | Glu | Val | Arg | Gly | Ser | Glu | Pro |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Lys | Lys | Val | His | His | Ala | Asn | Leu | Thr | Lys | Ala | Glu | Thr | Thr | Pro |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Ser | Met | Ile | Pro | Ser | Gln | Ser | Arg | Ala | Phe | Gln | Thr | Val | | |
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<211> 3534

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<211> 655

<212> PRT

<213> Homo sapiens

<400> 64

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| Met | Gly | Thr | Ser | Pro | Ser | Ser | Ser | Thr | Ala | Leu | Ala | Ser | Cys | Ser |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |
| Arg | Ile | Ala | Arg | Arg | Ala | Thr | Ala | Thr | Met | Ile | Ala | Gly | Ser | Leu |
| | | | 20 | | | | | 25 | | | | | 30 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Leu | Gly | Phe | Leu | Ser | Thr | Thr | Thr | Ala | Gln | Pro | Glu | Gln | 35 | 40 | 45 |
| Lys | Ala | Ser | Asn | Leu | Ile | Gly | Thr | Tyr | Arg | His | Val | Asp | Arg | Ala | 50 | 55 | 60 |
| Thr | Gly | Gln | Val | Leu | Thr | Cys | Asp | Lys | Cys | Pro | Ala | Gly | Thr | Tyr | 65 | 70 | 75 |
| Val | Ser | Glu | His | Cys | Thr | Asn | Thr | Ser | Leu | Arg | Val | Cys | Ser | Ser | 80 | 85 | 90 |
| Cys | Pro | Val | Gly | Thr | Phe | Thr | Arg | His | Glu | Asn | Gly | Ile | Glu | Lys | 95 | 100 | 105 |
| Cys | His | Asp | Cys | Ser | Gln | Pro | Cys | Pro | Trp | Pro | Met | Ile | Glu | Lys | 110 | 115 | 120 |
| Leu | Pro | Cys | Ala | Ala | Leu | Thr | Asp | Arg | Glu | Cys | Thr | Cys | Pro | Pro | 125 | 130 | 135 |
| Gly | Met | Phe | Gln | Ser | Asn | Ala | Thr | Cys | Ala | Pro | His | Thr | Val | Cys | 140 | 145 | 150 |
| Pro | Val | Gly | Trp | Gly | Val | Arg | Lys | Lys | Gly | Thr | Glu | Thr | Glu | Asp | 155 | 160 | 165 |
| Val | Arg | Cys | Lys | Gln | Cys | Ala | Arg | Gly | Thr | Phe | Ser | Asp | Val | Pro | 170 | 175 | 180 |
| Ser | Ser | Val | Met | Lys | Cys | Lys | Ala | Tyr | Thr | Asp | Cys | Leu | Ser | Gln | 185 | 190 | 195 |
| Asn | Leu | Val | Val | Ile | Lys | Pro | Gly | Thr | Lys | Glu | Thr | Asp | Asn | Val | 200 | 205 | 210 |
| Cys | Gly | Thr | Leu | Pro | Ser | Phe | Ser | Ser | Ser | Thr | Ser | Pro | Ser | Pro | 215 | 220 | 225 |
| Gly | Thr | Ala | Ile | Phe | Pro | Arg | Pro | Glu | His | Met | Glu | Thr | His | Glu | 230 | 235 | 240 |
| Val | Pro | Ser | Ser | Thr | Tyr | Val | Pro | Lys | Gly | Met | Asn | Ser | Thr | Glu | 245 | 250 | 255 |
| Ser | Asn | Ser | Ser | Ala | Ser | Val | Arg | Pro | Lys | Val | Leu | Ser | Ser | Ile | 260 | 265 | 270 |
| Gln | Glu | Gly | Thr | Val | Pro | Asp | Asn | Thr | Ser | Ser | Ala | Arg | Gly | Lys | 275 | 280 | 285 |
| Glu | Asp | Val | Asn | Lys | Thr | Leu | Pro | Asn | Leu | Gln | Val | Val | Asn | His | 290 | 295 | 300 |
| Gln | Gln | Gly | Pro | His | His | Arg | His | Ile | Leu | Lys | Leu | Leu | Pro | Ser | 305 | 310 | 315 |
| Met | Glu | Ala | Thr | Gly | Gly | Glu | Lys | Ser | Ser | Thr | Pro | Ile | Lys | Gly | | | |

| | | |
|---------------------|---|-----|
| 320 | 325 | 330 |
| Pro Lys Arg Gly His | Pro Arg Gln Asn Leu His Lys His Phe Asp | |
| 335 | 340 | 345 |
| Ile Asn Glu His Leu | Pro Trp Met Ile Val Leu Phe Leu Leu Leu | |
| 350 | 355 | 360 |
| Val Leu Val Val Ile | Val Val Cys Ser Ile Arg Lys Ser Ser Arg | |
| 365 | 370 | 375 |
| Thr Leu Lys Lys Gly | Pro Arg Gln Asp Pro Ser Ala Ile Val Glu | |
| 380 | 385 | 390 |
| Lys Ala Gly Leu Lys | Lys Ser Met Thr Pro Thr Gln Asn Arg Glu | |
| 395 | 400 | 405 |
| Lys Trp Ile Tyr Tyr | Cys Asn Gly His Gly Ile Asp Ile Leu Lys | |
| 410 | 415 | 420 |
| Leu Val Ala Ala Gln | Val Gly Ser Gln Trp Lys Asp Ile Tyr Gln | |
| 425 | 430 | 435 |
| Phe Leu Cys Asn Ala | Ser Glu Arg Glu Val Ala Ala Phe Ser Asn | |
| 440 | 445 | 450 |
| Gly Tyr Thr Ala Asp | His Glu Arg Ala Tyr Ala Ala Leu Gln His | |
| 455 | 460 | 465 |
| Trp Thr Ile Arg Gly | Pro Glu Ala Ser Leu Ala Gln Leu Ile Ser | |
| 470 | 475 | 480 |
| Ala Leu Arg Gln His | Arg Arg Asn Asp Val Val Glu Lys Ile Arg | |
| 485 | 490 | 495 |
| Gly Leu Met Glu Asp | Thr Thr Gln Leu Glu Thr Asp Lys Leu Ala | |
| 500 | 505 | 510 |
| Leu Pro Met Ser Pro | Ser Pro Leu Ser Pro Ser Pro Ile Pro Ser | |
| 515 | 520 | 525 |
| Pro Asn Ala Lys Leu | Glu Asn Ser Ala Leu Leu Thr Val Glu Pro | |
| 530 | 535 | 540 |
| Ser Pro Gln Asp Lys | Asn Lys Gly Phe Phe Val Asp Glu Ser Glu | |
| 545 | 550 | 555 |
| Pro Leu Leu Arg Cys | Asp Ser Thr Ser Ser Gly Ser Ser Ala Leu | |
| 560 | 565 | 570 |
| Ser Arg Asn Gly Ser | Phe Ile Thr Lys Glu Lys Lys Asp Thr Val | |
| 575 | 580 | 585 |
| Leu Arg Gln Val Arg | Leu Asp Pro Cys Asp Leu Gln Pro Ile Phe | |
| 590 | 595 | 600 |
| Asp Asp Met Leu His | Phe Leu Asn Pro Glu Glu Leu Arg Val Ile | |
| 605 | 610 | 615 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Glu | Ile | Pro | Gln | Ala | Glu | Asp | Lys | Leu | Asp | Arg | Leu | Phe | Glu |
| | | | | 620 | | | | | 625 | | | | | 630 |
| | | | | | | | | | | | | | | |
| Ile | Ile | Gly | Val | Lys | Ser | Gln | Glu | Ala | Ser | Gln | Thr | Leu | Leu | Asp |
| | | | | 635 | | | | | 640 | | | | | 645 |
| | | | | | | | | | | | | | | |
| Ser | Val | Tyr | Ser | His | Leu | Pro | Asp | Leu | Leu | | | | | |
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<212> PRT

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<400> 69

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| Arg | Ser | Leu | Phe | Gly | Leu | Asp | Asp | Leu | Lys | Ile | Ser | Pro | Val | Ala |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Pro | Asp | Ala | Asp | Ala | Val | Ala | Ala | Gln | Ile | Leu | Ser | Leu | Leu | Pro |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Lys | Phe | Phe | Pro | Ile | Ile | Val | Ile | Gly | Ile | Ile | Ala | Leu | Ile |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Ala | Leu | Ala | Ile | Gly | Leu | Gly | Ile | His | Phe | Asp | Cys | Ser | Gly |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Lys | Tyr | Arg | Cys | Arg | Ser | Ser | Phe | Lys | Cys | Ile | Glu | Leu | Ile | Ala |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Arg | Cys | Asp | Gly | Val | Ser | Asp | Cys | Lys | Asp | Gly | Glu | Asp | Glu | Tyr |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Arg | Cys | Val | Arg | Val | Gly | Gly | Gln | Asn | Ala | Val | Leu | Gln | Val | Phe |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|--|-----|
| | 110 | | 115 | | 120 |
| Thr Ala Ala Ser | Trp Lys Thr Met Cys | Ser Asp Asp Trp Lys Gly | | | |
| | 125 | 130 | | | 135 |
| His Tyr Ala Asn | Val Ala Cys Ala Gln | Leu Gly Phe Pro Ser Tyr | | | |
| | 140 | 145 | | | 150 |
| Val Ser Ser Asp | Asn Leu Arg Val Ser | Ser Leu Glu Gly Gln Phe | | | |
| | 155 | 160 | | | 165 |
| Arg Glu Glu Phe | Val Ser Ile Asp His | Leu Leu Pro Asp Asp Lys | | | |
| | 170 | 175 | | | 180 |
| Val Thr Ala Leu | His His Ser Val Tyr | Val Arg Glu Gly Cys Ala | | | |
| | 185 | 190 | | | 195 |
| Ser Gly His Val | Val Thr Leu Gln Cys | Thr Ala Cys Gly His Arg | | | |
| | 200 | 205 | | | 210 |
| Arg Gly Tyr Ser | Ser Arg Ile Val Gly | Gly Asn Met Ser Leu Leu | | | |
| | 215 | 220 | | | 225 |
| Ser Gln Trp Pro | Trp Gln Ala Ser Leu | Gln Phe Gln Gly Tyr His | | | |
| | 230 | 235 | | | 240 |
| Leu Cys Gly Gly | Ser Val Ile Thr Pro | Leu Trp Ile Ile Thr Ala | | | |
| | 245 | 250 | | | 255 |
| Ala His Cys Val | Tyr Asp Leu Tyr Leu | Pro Lys Ser Trp Thr Ile | | | |
| | 260 | 265 | | | 270 |
| Gln Val Gly Leu | Val Ser Leu Leu Asp | Asn Pro Ala Pro Ser His | | | |
| | 275 | 280 | | | 285 |
| Leu Val Glu Lys | Ile Val Tyr His Ser | Lys Tyr Lys Pro Lys Arg | | | |
| | 290 | 295 | | | 300 |
| Leu Gly Asn Asp | Ile Ala Leu Met Lys | Leu Ala Gly Pro Leu Thr | | | |
| | 305 | 310 | | | 315 |
| Phe Asn Glu Met | Ile Gln Pro Val Cys | Leu Pro Asn Ser Glu Glu | | | |
| | 320 | 325 | | | 330 |
| Asn Phe Pro Asp | Gly Lys Val Cys Trp | Thr Ser Gly Trp Gly Ala | | | |
| | 335 | 340 | | | 345 |
| Thr Glu Asp Gly | Gly Asp Ala Ser Pro | Val Leu Asn His Ala Ala | | | |
| | 350 | 355 | | | 360 |
| Val Pro Leu Ile | Ser Asn Lys Ile Cys | Asn His Arg Asp Val Tyr | | | |
| | 365 | 370 | | | 375 |
| Gly Gly Ile Ile | Ser Pro Ser Met Leu | Cys Ala Gly Tyr Leu Thr | | | |
| | 380 | 385 | | | 390 |
| Gly Gly Val Asp | Ser Cys Gln Gly Asp | Ser Gly Gly Pro Leu Val | | | |
| | 395 | 400 | | | 405 |

Cys Gln Glu Arg Arg Leu Trp Lys Leu Val Gly Ala Thr Ser Phe
410 415 420

Gly Ile Gly Cys Ala Glu Val Asn Lys Pro Gly Val Tyr Thr Arg
425 430 435

Val Thr Ser Phe Leu Asp Trp Ile His Glu Gln Met Glu Arg Asp
440 445 450

Leu Lys Thr

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<220>
<223> Synthetic oligonucleotide probe

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<210> 71
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<220>
<223> Synthetic oligonucleotide probe

<400> 71
tacacgtccc tgtggttgca gatc 24

<210> 72
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<212> DNA
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<210> 73
<211> 3305
<212> DNA
<213> Homo sapiens

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gctcagcggc ggcgcggggc ctgcgcgagg gctccggagc tgactcgccg 200

ctgcaatgcc accacctgta ccctgaagcc ggacgctgtg tgcgcacatg 1700
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tactgcccga gccaatgtgt acctgcacga tgggcactca tgtcaggatg 1850
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agcagggttt tagtttttta tttatcagag accctgccac ccattccatc 3050
tccatccaag caaactgaat ggcaatgaaa caaactggag aagaaggtag 3100

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Tyr | Val | Glu | Leu | Val | Ile | Val | Ala | Asp | Asn | Arg | Glu | Phe | Gln | 215 | 220 | 225 |
| Arg | Gln | Gly | Lys | Asp | Leu | Glu | Lys | Val | Lys | Gln | Arg | Leu | Ile | Glu | 230 | 235 | 240 |
| Ile | Ala | Asn | His | Val | Asp | Lys | Phe | Tyr | Arg | Pro | Leu | Asn | Ile | Arg | 245 | 250 | 255 |
| Ile | Val | Leu | Val | Gly | Val | Glu | Val | Trp | Asn | Asp | Met | Asp | Lys | Cys | 260 | 265 | 270 |
| Ser | Val | Ser | Gln | Asp | Pro | Phe | Thr | Ser | Leu | His | Glu | Phe | Leu | Asp | 275 | 280 | 285 |
| Trp | Arg | Lys | Met | Lys | Leu | Leu | Pro | Arg | Lys | Ser | His | Asp | Asn | Ala | 290 | 295 | 300 |
| Gln | Leu | Val | Ser | Gly | Val | Tyr | Phe | Gln | Gly | Thr | Thr | Ile | Gly | Met | 305 | 310 | 315 |
| Ala | Pro | Ile | Met | Ser | Met | Cys | Thr | Ala | Asp | Gln | Ser | Gly | Gly | Ile | 320 | 325 | 330 |
| Val | Met | Asp | His | Ser | Asp | Asn | Pro | Leu | Gly | Ala | Ala | Val | Thr | Leu | 335 | 340 | 345 |
| Ala | His | Glu | Leu | Gly | His | Asn | Phe | Gly | Met | Asn | His | Asp | Thr | Leu | 350 | 355 | 360 |
| Asp | Arg | Gly | Cys | Ser | Cys | Gln | Met | Ala | Val | Glu | Lys | Gly | Gly | Cys | 365 | 370 | 375 |
| Ile | Met | Asn | Ala | Ser | Thr | Gly | Tyr | Pro | Phe | Pro | Met | Val | Phe | Ser | 380 | 385 | 390 |
| Ser | Cys | Ser | Arg | Lys | Asp | Leu | Glu | Thr | Ser | Leu | Glu | Lys | Gly | Met | 395 | 400 | 405 |
| Gly | Val | Cys | Leu | Phe | Asn | Leu | Pro | Glu | Val | Arg | Glu | Ser | Phe | Gly | 410 | 415 | 420 |
| Gly | Gln | Lys | Cys | Gly | Asn | Arg | Phe | Val | Glu | Glu | Gly | Glu | Glu | Cys | 425 | 430 | 435 |
| Asp | Cys | Gly | Glu | Pro | Glu | Glu | Cys | Met | Asn | Arg | Cys | Cys | Asn | Ala | 440 | 445 | 450 |
| Thr | Thr | Cys | Thr | Leu | Lys | Pro | Asp | Ala | Val | Cys | Ala | His | Gly | Leu | 455 | 460 | 465 |
| Cys | Cys | Glu | Asp | Cys | Gln | Leu | Lys | Pro | Ala | Gly | Thr | Ala | Cys | Arg | 470 | 475 | 480 |
| Asp | Ser | Ser | Asn | Ser | Cys | Asp | Leu | Pro | Glu | Phe | Cys | Thr | Gly | Ala | 485 | 490 | 495 |
| Ser | Pro | His | Cys | Pro | Ala | Asn | Val | Tyr | Leu | His | Asp | Gly | His | Ser | | | |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|--|-----|
| | 500 | | 505 | | 510 |
| Cys Gln Asp Val | Asp Gly Tyr Cys Tyr | Asn Gly Ile Cys Gln Thr | | | |
| | 515 | 520 | | | 525 |
| His Glu Gln Gln | Cys Val Thr Leu Trp | Gly Pro Gly Ala Lys Pro | | | |
| | 530 | 535 | | | 540 |
| Ala Pro Gly Ile | Cys Phe Glu Arg Val | Asn Ser Ala Gly Asp Pro | | | |
| | 545 | 550 | | | 555 |
| Tyr Gly Asn Cys | Gly Lys Val Ser Lys | Ser Ser Phe Ala Lys Cys | | | |
| | 560 | 565 | | | 570 |
| Glu Met Arg Asp | Ala Lys Cys Gly Lys | Ile Gln Cys Gln Gly Gly | | | |
| | 575 | 580 | | | 585 |
| Ala Ser Arg Pro | Val Ile Gly Thr Asn | Ala Val Ser Ile Glu Thr | | | |
| | 590 | 595 | | | 600 |
| Asn Ile Pro Leu | Gln Gln Gly Gly Arg | Ile Leu Cys Arg Gly Thr | | | |
| | 605 | 610 | | | 615 |
| His Val Tyr Leu | Gly Asp Asp Met Pro | Asp Pro Gly Leu Val Leu | | | |
| | 620 | 625 | | | 630 |
| Ala Gly Thr Lys | Cys Ala Asp Gly Lys | Ile Cys Leu Asn Arg Gln | | | |
| | 635 | 640 | | | 645 |
| Cys Gln Asn Ile | Ser Val Phe Gly Val | His Glu Cys Ala Met Gln | | | |
| | 650 | 655 | | | 660 |
| Cys His Gly Arg | Gly Val Cys Asn Asn | Arg Lys Asn Cys His Cys | | | |
| | 665 | 670 | | | 675 |
| Glu Ala His Trp | Ala Pro Pro Phe Cys | Asp Lys Phe Gly Phe Gly | | | |
| | 680 | 685 | | | 690 |
| Gly Ser Thr Asp | Ser Gly Pro Ile Arg | Gln Ala Glu Ala Arg Gln | | | |
| | 695 | 700 | | | 705 |
| Glu Ala Ala Glu | Ser Asn Arg Glu Arg | Gly Gln Gly Gln Glu Pro | | | |
| | 710 | 715 | | | 720 |
| Val Gly Ser Gln | Glu His Ala Ser Thr | Ala Ser Leu Thr Leu Ile | | | |
| | 725 | 730 | | | 735 |

<210> 75

<211> 483

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 30, 94, 143, 156, 163, 179, 193, 369, 371, 381, 390, 473

<223> unknown base

<400> 75

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ctaccaggga agtttgcaga aacagtgcaa ggaagggcag ganttcctgg 150
ttgagntttt tgntaaaaca tggacatgnt tcagtgtctgc tcntgagaga 200
gtagcagggtt accacttttg gcaggcccca gccctgcagc aaggaggaag 250
aggactcaaa agtttggcct ttcactgagc ctccacagca gtgggggaga 300
agcaagggtt gggcccagtg tcccctttcc ccagtgcac ctcagccttg 350
gcagccctga taactggtnt ntggctgcaa nttaatgctn tgatatggct 400
tttagcattt attatatgaa aatagcaggg ttttagtttt taatttatca 450
gagaccctgc caccattcc atntccatcc aag 483

- <210> 76
- <211> 27
- <212> DNA
- <213> Artificial Sequence

- <220>
- <223> Synthetic oligonucleotide probe

- <400> 76
- gtctcagcac gtgttctggt ctcagg 27

- <210> 77
- <211> 18
- <212> DNA
- <213> Artificial Sequence

- <220>
- <223> Synthetic oligonucleotide probe

- <400> 77
- catgagcatg tgcacggc 18

- <210> 78
- <211> 18
- <212> DNA
- <213> Artificial Sequence

- <220>
- <223> Synthetic oligonucleotide probe

- <400> 78
- tacctgcacg atgggcac 18

- <210> 79
- <211> 18
- <212> DNA
- <213> Artificial Sequence

<220>
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 <400> 79
 cactgggcac ctcccttc 18

 <210> 80
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 <400> 80
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 <210> 81
 <211> 24
 <212> DNA
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 <220>
 <223> Synthetic oligonucleotide probe

 <400> 81
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 <210> 82
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 <212> DNA
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 <220>
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 <400> 82
 cttcgctggg aagagtttg 19

 <210> 83
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 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 83
 gtgcaaccaa cagatacaaa ctcttcccag cgaagaagct gaaaagcgtc 50

 <210> 84
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 <212> DNA
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 gaatagcgtg aactcaggag gcggagcttg cagtgagccg agattgcgct 1650
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<210> 85
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 <212> PRT
 <213> Homo sapiens

<400> 85
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 35 40 45
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<400> 86
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<210> 87
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<220>
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<400> 87
 ggtagagatg tagaagggca agcaagacc 29

<210> 88
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 <212> DNA
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<220>

<223> Synthetic oligonucleotide probe

<400> 88

gctccctacc cgtgcaggtt tcttcatttg ttcctttaac cagtatgccg 50

<210> 89

<211> 2956

<212> DNA

<213> Homo sapiens

<400> 89

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gctgctgctg ggccatggcg gcggcgggcg ctggggcgcc cgggcccagg 150
aggcggcggc ggcgggcgcg gacgggcccc ccgcggcaga cggcgaggac 200
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gacaccagag ccggaagtgg aaccgcccag tgccccgag ctcaagcaag 600
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<210> 90
 <211> 432
 <212> PRT
 <213> Homo sapiens

<400> 90
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 Ala Ala Leu Thr Ala Leu Leu Leu Leu Leu Leu Gly His Gly Gly
 20 25 30
 Gly Gly Arg Trp Gly Ala Arg Ala Gln Glu Ala Ala Ala Ala Ala
 35 40 45
 Ala Asp Gly Pro Pro Ala Ala Asp Gly Glu Asp Gly Gln Asp Pro
 50 55 60
 His Ser Lys His Leu Tyr Thr Ala Asp Met Phe Thr His Gly Ile
 65 70 75
 Gln Ser Ala Ala His Phe Val Met Phe Phe Ala Pro Trp Cys Gly
 80 85 90
 His Cys Gln Arg Leu Gln Pro Thr Trp Asn Asp Leu Gly Asp Lys
 95 100 105
 Tyr Asn Ser Met Glu Asp Ala Lys Val Tyr Val Ala Lys Val Asp
 110 115 120
 Cys Thr Ala His Ser Asp Val Cys Ser Ala Gln Gly Val Arg Gly
 125 130 135
 Tyr Pro Thr Leu Lys Leu Phe Lys Pro Gly Gln Glu Ala Val Lys
 140 145 150
 Tyr Gln Gly Pro Arg Asp Phe Gln Thr Leu Glu Asn Trp Met Leu
 155 160 165
 Gln Thr Leu Asn Glu Glu Pro Val Thr Pro Glu Pro Glu Val Glu
 170 175 180

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Pro | Ser | Ala | Pro | Glu | Leu | Lys | Gln | Gly | Leu | Tyr | Glu | Leu | Ser | 185 | 190 | 195 |
| Ala | Ser | Asn | Phe | Glu | Leu | His | Val | Ala | Gln | Gly | Asp | His | Phe | Ile | 200 | 205 | 210 |
| Lys | Phe | Phe | Ala | Pro | Trp | Cys | Gly | His | Cys | Lys | Ala | Leu | Ala | Pro | 215 | 220 | 225 |
| Thr | Trp | Glu | Gln | Leu | Ala | Leu | Gly | Leu | Glu | His | Ser | Glu | Thr | Val | 230 | 235 | 240 |
| Lys | Ile | Gly | Lys | Val | Asp | Cys | Thr | Gln | His | Tyr | Glu | Leu | Cys | Ser | 245 | 250 | 255 |
| Gly | Asn | Gln | Val | Arg | Gly | Tyr | Pro | Thr | Leu | Leu | Trp | Phe | Arg | Asp | 260 | 265 | 270 |
| Gly | Lys | Lys | Val | Asp | Gln | Tyr | Lys | Gly | Lys | Arg | Asp | Leu | Glu | Ser | 275 | 280 | 285 |
| Leu | Arg | Glu | Tyr | Val | Glu | Ser | Gln | Leu | Gln | Arg | Thr | Glu | Thr | Gly | 290 | 295 | 300 |
| Ala | Thr | Glu | Thr | Val | Thr | Pro | Ser | Glu | Ala | Pro | Val | Leu | Ala | Ala | 305 | 310 | 315 |
| Glu | Pro | Glu | Ala | Asp | Lys | Gly | Thr | Val | Leu | Ala | Leu | Thr | Glu | Asn | 320 | 325 | 330 |
| Asn | Phe | Asp | Asp | Thr | Ile | Ala | Glu | Gly | Ile | Thr | Phe | Ile | Lys | Phe | 335 | 340 | 345 |
| Tyr | Ala | Pro | Trp | Cys | Gly | His | Cys | Lys | Thr | Leu | Ala | Pro | Thr | Trp | 350 | 355 | 360 |
| Glu | Glu | Leu | Ser | Lys | Lys | Glu | Phe | Pro | Gly | Leu | Ala | Gly | Val | Lys | 365 | 370 | 375 |
| Ile | Ala | Glu | Val | Asp | Cys | Thr | Ala | Glu | Arg | Asn | Ile | Cys | Ser | Lys | 380 | 385 | 390 |
| Tyr | Ser | Val | Arg | Gly | Tyr | Pro | Thr | Leu | Leu | Leu | Phe | Arg | Gly | Gly | 395 | 400 | 405 |
| Lys | Lys | Val | Ser | Glu | His | Ser | Gly | Gly | Arg | Asp | Leu | Asp | Ser | Leu | 410 | 415 | 420 |
| His | Arg | Phe | Val | Leu | Ser | Gln | Ala | Lys | Asp | Glu | Leu | | | | 425 | 430 | |

<210> 91

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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<400> 91
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<210> 92
<211> 21
<212> DNA
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<220>
<223> Synthetic oligonucleotide probe

<400> 92
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<220>
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<211> 1016
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  aaaccaattt atcctcctgg tactatttct ttgtcaaatt cagagtctgg 100
  gtctggatat tgatagccgt cctaccgctg aagtctgtgc cacacacaca 150

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| | 80 | 85 | 90 |
|-----------------|---------------------|---------------------|-----|
| Thr Gly Pro Ile | Gly Lys Lys Gly Asp | Lys Gly Glu Lys Gly | Leu |
| | 95 | 100 | 105 |
| Leu Gly Ile Pro | Gly Glu Lys Gly Lys | Ala Gly Thr Val Cys | Asp |
| | 110 | 115 | 120 |
| Cys Gly Arg Tyr | Arg Lys Phe Val Gly | Gln Leu Asp Ile Ser | Ile |
| | 125 | 130 | 135 |
| Ala Arg Leu Lys | Thr Ser Met Lys Phe | Val Lys Asn Val Ile | Ala |
| | 140 | 145 | 150 |
| Gly Ile Arg Glu | Thr Glu Glu Lys Phe | Tyr Tyr Ile Val Gln | Glu |
| | 155 | 160 | 165 |
| Glu Lys Asn Tyr | Arg Glu Ser Leu Thr | His Cys Arg Ile Arg | Gly |
| | 170 | 175 | 180 |
| Gly Met Leu Ala | Met Pro Lys Asp Glu | Ala Ala Asn Thr Leu | Ile |
| | 185 | 190 | 195 |
| Ala Asp Tyr Val | Ala Lys Ser Gly Phe | Phe Arg Val Phe Ile | Gly |
| | 200 | 205 | 210 |
| Val Asn Asp Leu | Glu Arg Glu Gly Gln | Tyr Met Ser Thr Asp | Asn |
| | 215 | 220 | 225 |
| Thr Pro Leu Gln | Asn Tyr Ser Asn Trp | Asn Glu Gly Glu Pro | Ser |
| | 230 | 235 | 240 |
| Asp Pro Tyr Gly | His Glu Asp Cys Val | Glu Met Leu Ser Ser | Gly |
| | 245 | 250 | 255 |
| Arg Trp Asn Asp | Thr Glu Cys His Leu | Thr Met Tyr Phe Val | Cys |
| | 260 | 265 | 270 |
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<212> DNA

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<223> Synthetic oligonucleotide probe

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<210> 101

<211> 2574

<212> DNA

<213> Homo sapiens

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| Ala Thr Ser Pro | Gly Glu Pro Gly Leu 530 | Leu Val Ala Pro Val 535 | Ser 540 |
| Gln Gln Ser Pro | Phe Leu Gly Tyr Ala 545 | Gly Gly Pro Glu Leu 550 | Ala 555 |
| Gln Gly Lys Leu | Leu Lys Asp Val Phe 560 | Arg Pro Gly Asp Val 565 | Phe 570 |
| Phe Asn Thr Gly | Asp Leu Leu Val Cys 575 | Asp Asp Gln Gly Phe 580 | Leu 585 |
| Arg Phe His Asp | Arg Thr Gly Asp Thr 590 | Phe Arg Trp Lys Gly 595 | Glu 600 |
| Asn Val Ala Thr | Thr Glu Val Ala Glu 605 | Val Phe Glu Ala Leu 610 | Asp 615 |
| Phe Leu Gln Glu | Val Asn Val Tyr Gly 620 | Val Thr Val Pro Gly 625 | His 630 |
| Glu Gly Arg Ala | Gly Met Ala Ala Leu 635 | Val Leu Arg Pro Pro 640 | His 645 |
| Ala Leu Asp Leu | Met Gln Leu Tyr Thr 650 | His Val Ser Glu Asn 655 | Leu 660 |
| Pro Pro Tyr Ala | Arg Pro Arg Phe Leu 665 | Arg Leu Gln Glu Ser 670 | Leu 675 |
| Ala Thr Thr Glu | Thr Phe Lys Gln Gln 680 | Lys Val Arg Met Ala 685 | Asn 690 |
| Glu Gly Phe Asp | Pro Ser Thr Leu Ser 695 | Asp Pro Leu Tyr Val 700 | Leu 705 |
| Asp Gln Ala Val | Gly Ala Tyr Leu Pro 710 | Leu Thr Thr Ala Arg 715 | Tyr 720 |
| Ser Ala Leu Leu | Ala Gly Asn Leu Arg 725 | Ile 730 | |

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<220>

<223> Synthetic oligonucleotide probe

<400> 103

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<211> 555

<212> PRT

<213> Homo sapiens

<400> 109

| | | | | | | | | | | | | | | |
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| Met | Pro | Ser | Trp | Ile | Gly | Ala | Val | Ile | Leu | Pro | Leu | Leu | Gly | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Leu | Ser | Leu | Pro | Ala | Gly | Ala | Asp | Val | Lys | Ala | Arg | Ser | Cys |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Gly | Glu | Val | Arg | Gln | Ala | Tyr | Gly | Ala | Lys | Gly | Phe | Ser | Leu | Ala |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Asp | Ile | Pro | Tyr | Gln | Glu | Ile | Ala | Gly | Glu | His | Leu | Arg | Ile | Cys |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Pro | Gln | Glu | Tyr | Thr | Cys | Cys | Thr | Thr | Glu | Met | Glu | Asp | Lys | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gln | Gln | Ser | Lys | Leu | Glu | Phe | Glu | Asn | Leu | Val | Glu | Glu | Thr | 80 | 85 | 90 |
| Ser | His | Phe | Val | Arg | Thr | Thr | Phe | Val | Ser | Arg | His | Lys | Lys | Phe | 95 | 100 | 105 |
| Asp | Glu | Phe | Phe | Arg | Glu | Leu | Leu | Glu | Asn | Ala | Glu | Lys | Ser | Leu | 110 | 115 | 120 |
| Asn | Asp | Met | Phe | Val | Arg | Thr | Tyr | Gly | Met | Leu | Tyr | Met | Gln | Asn | 125 | 130 | 135 |
| Ser | Glu | Val | Phe | Gln | Asp | Leu | Phe | Thr | Glu | Leu | Lys | Arg | Tyr | Tyr | 140 | 145 | 150 |
| Thr | Gly | Gly | Asn | Val | Asn | Leu | Glu | Glu | Met | Leu | Asn | Asp | Phe | Trp | 155 | 160 | 165 |
| Ala | Arg | Leu | Leu | Glu | Arg | Met | Phe | Gln | Leu | Ile | Asn | Pro | Gln | Tyr | 170 | 175 | 180 |
| His | Phe | Ser | Glu | Asp | Tyr | Leu | Glu | Cys | Val | Ser | Lys | Tyr | Thr | Asp | 185 | 190 | 195 |
| Gln | Leu | Lys | Pro | Phe | Gly | Asp | Val | Pro | Arg | Lys | Leu | Lys | Ile | Gln | 200 | 205 | 210 |
| Val | Thr | Arg | Ala | Phe | Ile | Ala | Ala | Arg | Thr | Phe | Val | Gln | Gly | Leu | 215 | 220 | 225 |
| Thr | Val | Gly | Arg | Glu | Val | Ala | Asn | Arg | Val | Ser | Lys | Val | Ser | Pro | 230 | 235 | 240 |
| Thr | Pro | Gly | Cys | Ile | Arg | Ala | Leu | Met | Lys | Met | Leu | Tyr | Cys | Pro | 245 | 250 | 255 |
| Tyr | Cys | Arg | Gly | Leu | Pro | Thr | Val | Arg | Pro | Cys | Asn | Asn | Tyr | Cys | 260 | 265 | 270 |
| Leu | Asn | Val | Met | Lys | Gly | Cys | Leu | Ala | Asn | Gln | Ala | Asp | Leu | Asp | 275 | 280 | 285 |
| Thr | Glu | Trp | Asn | Leu | Phe | Ile | Asp | Ala | Met | Leu | Leu | Val | Ala | Glu | 290 | 295 | 300 |
| Arg | Leu | Glu | Gly | Pro | Phe | Asn | Ile | Glu | Ser | Val | Met | Asp | Pro | Ile | 305 | 310 | 315 |
| Asp | Val | Lys | Ile | Ser | Glu | Ala | Ile | Met | Asn | Met | Gln | Glu | Asn | Ser | 320 | 325 | 330 |
| Met | Gln | Val | Ser | Ala | Lys | Val | Phe | Gln | Gly | Cys | Gly | Gln | Pro | Lys | 335 | 340 | 345 |
| Pro | Ala | Pro | Ala | Leu | Arg | Ser | Ala | Arg | Ser | Ala | Pro | Glu | Asn | Phe | 350 | 355 | 360 |
| Asn | Thr | Arg | Phe | Arg | Pro | Tyr | Asn | Pro | Glu | Glu | Arg | Pro | Thr | Thr | | | |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|--|-----|
| | 365 | | 370 | | 375 |
| Ala Ala Gly Thr | Ser Leu Asp Arg Leu | Val Thr Asp Ile Lys Glu | | | |
| | 380 | 385 | | | 390 |
| Lys Leu Lys Leu | Ser Lys Lys Val Trp | Ser Ala Leu Pro Tyr Thr | | | |
| | 395 | 400 | | | 405 |
| Ile Cys Lys Asp | Glu Ser Val Thr Ala | Gly Thr Ser Asn Glu Glu | | | |
| | 410 | 415 | | | 420 |
| Glu Cys Trp Asn | Gly His Ser Lys Ala | Arg Tyr Leu Pro Glu Ile | | | |
| | 425 | 430 | | | 435 |
| Met Asn Asp Gly | Leu Thr Asn Gln Ile | Asn Asn Pro Glu Val Asp | | | |
| | 440 | 445 | | | 450 |
| Val Asp Ile Thr | Arg Pro Asp Thr Phe | Ile Arg Gln Gln Ile Met | | | |
| | 455 | 460 | | | 465 |
| Ala Leu Arg Val | Met Thr Asn Lys Leu | Lys Asn Ala Tyr Asn Gly | | | |
| | 470 | 475 | | | 480 |
| Asn Asp Val Asn | Phe Gln Asp Thr Ser | Asp Glu Ser Ser Gly Ser | | | |
| | 485 | 490 | | | 495 |
| Gly Ser Gly Ser | Gly Cys Met Asp Asp | Val Cys Pro Thr Glu Phe | | | |
| | 500 | 505 | | | 510 |
| Glu Phe Val Thr | Thr Glu Ala Pro Ala | Val Asp Pro Asp Arg Arg | | | |
| | 515 | 520 | | | 525 |
| Glu Val Asp Ser | Ser Ala Ala Gln Arg | Gly His Ser Leu Leu Ser | | | |
| | 530 | 535 | | | 540 |
| Trp Ser Leu Thr | Cys Ile Val Leu Ala | Leu Gln Arg Leu Cys Arg | | | |
| | 545 | 550 | | | 555 |

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| 110 | | | | | | | | | | 115 | | | | | 120 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Ile | Cys | Thr | Pro | Ser | Arg | Ser | Gln | Phe | Ile | Thr | Gly | Lys | Tyr | Gln | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Ile | His | Thr | Gly | Leu | Gln | His | Ser | Ile | Ile | Arg | Pro | Thr | Gln | Pro | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Asn | Cys | Leu | Pro | Leu | Asp | Asn | Ala | Thr | Leu | Pro | Gln | Lys | Leu | Lys | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Glu | Val | Gly | Tyr | Ser | Thr | His | Met | Val | Gly | Lys | Trp | His | Leu | Gly | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Phe | Asn | Arg | Lys | Glu | Cys | Met | Pro | Thr | Arg | Arg | Gly | Phe | Asp | Thr | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Phe | Phe | Gly | Ser | Leu | Leu | Gly | Ser | Gly | Asp | Tyr | Tyr | Thr | His | Tyr | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Lys | Cys | Asp | Ser | Pro | Gly | Met | Cys | Gly | Tyr | Asp | Leu | Tyr | Glu | Asn | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Asp | Asn | Ala | Ala | Trp | Asp | Tyr | Asp | Asn | Gly | Ile | Tyr | Ser | Thr | Gln | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Met | Tyr | Thr | Gln | Arg | Val | Gln | Gln | Ile | Leu | Ala | Ser | His | Asn | Pro | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Thr | Lys | Pro | Ile | Phe | Leu | Tyr | Thr | Ala | Tyr | Gln | Ala | Val | His | Ser | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Pro | Leu | Gln | Ala | Pro | Gly | Arg | Tyr | Phe | Glu | His | Tyr | Arg | Ser | Ile | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Ile | Asn | Ile | Asn | Arg | Arg | Arg | Tyr | Ala | Ala | Met | Leu | Ser | Cys | Leu | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Asp | Glu | Ala | Ile | Asn | Asn | Val | Thr | Leu | Ala | Leu | Lys | Thr | Tyr | Gly | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Phe | Tyr | Asn | Asn | Ser | Ile | Ile | Ile | Tyr | Ser | Ser | Asp | Asn | Gly | Gly | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Gln | Pro | Thr | Ala | Gly | Gly | Ser | Asn | Trp | Pro | Leu | Arg | Gly | Ser | Lys | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |
| Gly | Thr | Tyr | Trp | Glu | Gly | Gly | Ile | Arg | Ala | Val | Gly | Phe | Val | His | | | | | |
| | | | | 350 | | | | | 355 | | | | | 360 | | | | | |
| Ser | Pro | Leu | Leu | Lys | Asn | Lys | Gly | Thr | Val | Cys | Lys | Glu | Leu | Val | | | | | |
| | | | | 365 | | | | | 370 | | | | | 375 | | | | | |
| His | Ile | Thr | Asp | Trp | Tyr | Pro | Thr | Leu | Ile | Ser | Leu | Ala | Glu | Gly | | | | | |
| | | | | 380 | | | | | 385 | | | | | 390 | | | | | |
| Gln | Ile | Asp | Glu | Asp | Ile | Gln | Leu | Asp | Gly | Tyr | Asp | Ile | Trp | Glu | | | | | |
| | | | | 395 | | | | | 400 | | | | | 405 | | | | | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ile | Ser | Glu | Gly | Leu | Arg | Ser | Pro | Arg | Val | Asp | Ile | Leu | His |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Asn | Ile | Asp | Pro | Tyr | Thr | Pro | Arg | Gln | Lys | Met | Ala | Pro | Gly | Gln |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Gln | Ala | Met | Gly | Ser | Gly | Thr | Leu | Gln | Ser | Ser | Gln | Pro | Ser | Glu |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Cys | Ser | Thr | Gly | Asn | Cys | Leu | Gln | Glu | Ile | Leu | Ala | Thr | Ala | Thr |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Gly | Ser | Pro | Leu | Ser | Leu | Ser | Ala | Thr | Trp | Asp | Arg | Thr | Gly | Gly |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Thr | Met | Asn | Gly | Ser | Pro | Cys | Gln | Leu | Ala | Lys | Val | Tyr | Gly | Phe |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Ser | Thr | Ser | Gln | Pro | Thr | His | Met | Arg | Gly | Trp | Thr | Tyr | Leu | Thr |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Gly | Ile | Gln | Glu | Ser | | | | | | | | | | |
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- <210> 115
- <211> 24
- <212> DNA
- <213> Artificial Sequence
- <220>
- <223> Synthetic oligonucleotide probe
- <400> 115
- cccaacccaa ctgtttacct ctgg 24
- <210> 116
- <211> 24
- <212> DNA
- <213> Artificial Sequence
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- <223> Synthetic oligonucleotide probe
- <400> 116
- ctctctgagt gtacatctgt gtgg 24
- <210> 117
- <211> 53
- <212> DNA
- <213> Artificial Sequence
- <220>
- <223> Synthetic oligonucleotide probe
- <220>
- <221> unsure
- <222> 33
- <223> unknown base

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cgg 53

<210> 118
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<212> DNA
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<222> 2009, 2026, 2033, 2055, 2074, 2078, 2086
<223> unknown base

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gggctcagga ggaggaagga ggacccgtgc gagaatgcct ctgccctgga 150
gccttgcgct cccgctgctg ctctcctggg tggcaggtgg ttctgggaac 200
gcggccagtg caaggcatca cgggttgta gcatcggcac gtcagcctgg 250
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acagcaaggg agtctgtgaa gctacatgcg aacctggatg taagtttggg 350
gagtgcgtgg gaccaaaca atgcagatgc tttccaggat acaccgggaa 400
aacctgcagt caagatgtga atgagtgtgg aatgaaaccc cggccatgcc 450
aacacagatg tgtgaataca cacggaagct acaagtgctt ttgcctcagt 500
ggccacatgc tcatgccaga tgctacgtgt gtgaactcta ggacatgtgc 550
catgataaac tgtcagtaca gctgtgaaga cacagaagaa gggccacagt 600
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aagatgtgtg aacacatttg gaagctacta ctgcaaattg cacattgggt 750
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catgaaaaag aaggcaaaaa ttaaaaatgt taccccagaa cccaccagga 1050

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 305 | | 310 | | 315 |
| Phe Asn Tyr Glu | Glu Ile Val Ser Arg | Gly Gly Asn Ser His | Gly | | |
| | 320 | 325 | 330 | | |
| Gly Lys Lys Gly | Asn Glu Glu Lys | | | | |
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 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 120
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<210> 121
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 121
 ggctgcacgt atggctatcc atag 24

<210> 122
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 122
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<210> 123
 <211> 1199
 <212> DNA
 <213> Homo sapiens

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 ggccgagtgg cagggacgac gcccagaatg ggagctgact gatatggtgg 150
 tgtgggtgac tggagcctcg agtgggaattg gtgaggagct ggcttaccag 200
 ttgtctaaac taggagtttc tcttgtgctg tcagccagaa gagtgcata 250
 gctggaaagg gtgaaaagaa gatgcctaga gaatggcaat ttaaaagaaa 300

| | 80 | 85 | 90 |
|-----------------|---------------------|---------------------|-----|
| Met Ser Gln Arg | Ser Leu Cys Met Asp | Thr Ser Leu Asp Val | Tyr |
| | 95 | 100 | 105 |
| Arg Lys Leu Ile | Glu Leu Asn Tyr Leu | Gly Thr Val Ser Leu | Thr |
| | 110 | 115 | 120 |
| Lys Cys Val Leu | Pro His Met Ile Glu | Arg Lys Gln Gly Lys | Ile |
| | 125 | 130 | 135 |
| Val Thr Val Asn | Ser Ile Leu Gly Ile | Ile Ser Val Pro Leu | Ser |
| | 140 | 145 | 150 |
| Ile Gly Tyr Cys | Ala Ser Lys His Ala | Leu Arg Gly Phe Phe | Asn |
| | 155 | 160 | 165 |
| Gly Leu Arg Thr | Glu Leu Ala Thr Tyr | Pro Gly Ile Ile Val | Ser |
| | 170 | 175 | 180 |
| Asn Ile Cys Pro | Gly Pro Val Gln Ser | Asn Ile Val Glu Asn | Ser |
| | 185 | 190 | 195 |
| Leu Ala Gly Glu | Val Thr Lys Thr Ile | Gly Asn Asn Gly Asp | Gln |
| | 200 | 205 | 210 |
| Ser His Lys Met | Thr Thr Ser Arg Cys | Val Arg Leu Met Leu | Ile |
| | 215 | 220 | 225 |
| Ser Met Ala Asn | Asp Leu Lys Glu Val | Trp Ile Ser Glu Gln | Pro |
| | 230 | 235 | 240 |
| Phe Leu Leu Val | Thr Tyr Leu Trp Gln | Tyr Met Pro Thr Trp | Ala |
| | 245 | 250 | 255 |
| Trp Trp Ile Thr | Asn Lys Met Gly Lys | Lys Arg Ile Glu Asn | Phe |
| | 260 | 265 | 270 |
| Lys Ser Gly Val | Asp Ala Asp Ser Ser | Tyr Phe Lys Ile Phe | Lys |
| | 275 | 280 | 285 |
| Thr Lys His Asp | | | |

<210> 125

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 125

gcaatgaact gggagctgc 19

<210> 126

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 126

ctgtgaatag catcctggg 19

<210> 127

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 127

cttttcaagc cactggaggg 20

<210> 128

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 128

ctgtagacat ccaagctggg atcc 24

<210> 129

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 129

aagagtctgc atccacacca ctc 23

<210> 130

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 130

acctgacgct actatgggcc gaggggcagg gacgacgccc agaattg 46

<210> 131

<211> 2365

<212> DNA

<213> Homo sapiens

<400> 131

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 tctgcctgcc ctatcctgac caccacctgc ctgatgggga gcgtggctgg 1600
 gttctgggac gggcccgccc aggagcaggc atcagctccc tccagacagt 1650
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 tgttacaaaa taaaa 2365

<210> 132

<211> 571

<212> PRT

<213> Homo sapiens

<400> 132

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| Met | Leu | Leu | Ser | Ser | Leu | Val | Ser | Leu | Ala | Gly | Ser | Val | Tyr | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Trp | Ile | Leu | Phe | Phe | Val | Leu | Tyr | Asp | Phe | Cys | Ile | Val | Cys |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ile | Thr | Thr | Tyr | Ala | Ile | Asn | Val | Ser | Leu | Met | Trp | Leu | Ser | Phe |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Arg | Lys | Val | Gln | Glu | Pro | Gln | Gly | Lys | Ala | Lys | Arg | His | Gly | Asn |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Thr | Val | Pro | Gly | Glu | Trp | Pro | Trp | Gln | Ala | Ser | Val | Arg | Arg | Gln |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| | | | | 365 | | | | | 370 | | | | | 375 |
| Thr | Arg | Pro | Glu | Glu 380 | Trp | Gly | Leu | Lys | Gln 385 | Leu | Ile | Leu | His | Gly 390 |
| Ala | Tyr | Thr | His | Pro 395 | Glu | Gly | Gly | Tyr | Asp 400 | Met | Ala | Leu | Leu | Leu 405 |
| Leu | Ala | Gln | Pro | Val 410 | Thr | Leu | Gly | Ala | Ser 415 | Leu | Arg | Pro | Leu | Cys 420 |
| Leu | Pro | Tyr | Pro | Asp 425 | His | His | Leu | Pro | Asp 430 | Gly | Glu | Arg | Gly | Trp 435 |
| Val | Leu | Gly | Arg | Ala 440 | Arg | Pro | Gly | Ala | Gly 445 | Ile | Ser | Ser | Leu | Gln 450 |
| Thr | Val | Pro | Val | Thr 455 | Leu | Leu | Gly | Pro | Arg 460 | Ala | Cys | Ser | Arg | Leu 465 |
| His | Ala | Ala | Pro | Gly 470 | Gly | Asp | Gly | Ser | Pro 475 | Ile | Leu | Pro | Gly | Met 480 |
| Val | Cys | Thr | Ser | Ala 485 | Val | Gly | Glu | Leu | Pro 490 | Ser | Cys | Glu | Gly | Leu 495 |
| Ser | Gly | Ala | Pro | Leu 500 | Val | His | Glu | Val | Arg 505 | Gly | Thr | Trp | Phe | Leu 510 |
| Ala | Gly | Leu | His | Ser 515 | Phe | Gly | Asp | Ala | Cys 520 | Gln | Gly | Pro | Ala | Arg 525 |
| Pro | Ala | Val | Phe | Thr 530 | Ala | Leu | Pro | Ala | Tyr 535 | Glu | Asp | Trp | Val | Ser 540 |
| Ser | Leu | Asp | Trp | Gln 545 | Val | Tyr | Phe | Ala | Glu 550 | Glu | Pro | Glu | Pro | Glu 555 |
| Ala | Glu | Pro | Gly | Ser 560 | Cys | Leu | Ala | Asn | Ile 565 | Ser | Gln | Pro | Thr | Ser 570 |

Cys

<210> 133

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 133

cctgtgctgt gcctcgagcc tgac 24

<210> 134

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 134

gtgggcagca gttagcaccg cctc 24

<210> 135

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 135

ggctggcatc atcagctttg catcaagctg tgcccaggag gacgc 45

<210> 136

<211> 1998

<212> DNA

<213> Homo sapiens

<400> 136

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gatgctgcgt cggcggggca gccctggcat ggggtgtcat gtgggtgcag 200
ccctgggagc actgtggttc tgccctcacag gagccctgga ggtccaggtc 250
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gccaacaag gacctgcggc caggggacac ggtgaccatc acgtgctcca 650
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cttgtttgat gtgcacagcg tccctgcgggt ggtgctgggt gcgaatggca 800
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| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Leu | Lys | His | Ser | Asp | Ser | Lys | Glu | Asp | Asp | Gly | Gln | Glu | Ile |
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Ala

<210> 138
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 138
 ctggcacagc tcaacctcat ctgg 24

<210> 139
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 139
 gctgtctgtc tgtctcattg 20

<210> 140
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<210> 141
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<400> 141
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<210> 142
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 <212> DNA
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<220>
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1007031-03401

<400> 142
tggaagaaga ggggtggtgat gtgg 24

<210> 143
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 143
cagctgacag acaccaaaca gctggtgcac agtttcaccg aaggc 45

<210> 144
<211> 2336
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 1620, 1673
<223> unknown base

<400> 144
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tacgttctta aatctatgaa gtcgaggac ctttcgctgc tttttagagg 150
acttctttcc ttgcttcagc aacatgaggc ttttcttggtg gaacgcggtc 200
ttgactctgt tcgtcacttc tttgattggg gctttgatcc ctgaaccaga 250
agtgaaaatt gaagttctcc agaagccatt catctgccat cgcaagacca 300
aaggagggga tttgatgttg gtccactatg aaggctactt agaaaaggac 350
ggctccttat ttactccac tcacaaacat aacaatgggtc agcccatttg 400
gtttaccctg ggcatcctgg aggtctctcaa aggttgggac cagggcttga 450
aaggaatgtg tgtaggagag aagagaaagc tcatcattcc tcctgctctg 500
ggctatggaa aagaaggaaa aggtaaaatt cccccagaaa gtacactgat 550
atttaatat gatctcctgg agattcgaaa tggaccaaga tcccatgaat 600
cattccaaga aatggatctt aatgatgact ggaaactctc taaagatgag 650
gttaaagcat atttaaagaa ggagtttgaa aaacatgggtg cggtggtgaa 700
tgaaagtcac catgatgctt tgggtggagga tatttttgat aaagaagatg 750
aagacaaaga tgggtttata tctgccagag aatttacata taaacacgat 800
gagttataga gatacatcta cccttttaat atagcactca tctttcaaga 850

gcagctacta ttgaataaat acctatcctg gatattt 2336

<210> 145

<211> 211

<212> PRT

<213> Homo sapiens

<400> 145

Met Arg Leu Phe Leu Trp Asn Ala Val Leu Thr Leu Phe Val Thr
1 5 10 15

Ser Leu Ile Gly Ala Leu Ile Pro Glu Pro Glu Val Lys Ile Glu
20 25 30

Val Leu Gln Lys Pro Phe Ile Cys His Arg Lys Thr Lys Gly Gly
35 40 45

Asp Leu Met Leu Val His Tyr Glu Gly Tyr Leu Glu Lys Asp Gly
50 55 60

Ser Leu Phe His Ser Thr His Lys His Asn Asn Gly Gln Pro Ile
65 70 75

Trp Phe Thr Leu Gly Ile Leu Glu Ala Leu Lys Gly Trp Asp Gln
80 85 90

Gly Leu Lys Gly Met Cys Val Gly Glu Lys Arg Lys Leu Ile Ile
95 100 105

Pro Pro Ala Leu Gly Tyr Gly Lys Glu Gly Lys Gly Lys Ile Pro
110 115 120

Pro Glu Ser Thr Leu Ile Phe Asn Ile Asp Leu Leu Glu Ile Arg
125 130 135

Asn Gly Pro Arg Ser His Glu Ser Phe Gln Glu Met Asp Leu Asn
140 145 150

Asp Asp Trp Lys Leu Ser Lys Asp Glu Val Lys Ala Tyr Leu Lys
155 160 165

Lys Glu Phe Glu Lys His Gly Ala Val Val Asn Glu Ser His His
170 175 180

Asp Ala Leu Val Glu Asp Ile Phe Asp Lys Glu Asp Glu Asp Lys
185 190 195

Asp Gly Phe Ile Ser Ala Arg Glu Phe Thr Tyr Lys His Asp Glu
200 205 210

Leu

<210> 146

<211> 26

<212> DNA

<213> Artificial Sequence

10017051.102401

<220>
 <223> Synthetic oligonucleotide probe

<400> 146
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<210> 147
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 147
 gccagagca ggaggaatga tgagc 25

<210> 148
 <211> 49
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 148
 gtggaacgcg gtcttgactc tgttcgtcac ttctttgatt ggggctttg 49

<210> 149
 <211> 2196
 <212> DNA
 <213> Homo sapiens

<400> 149
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 ttttttttagc atccaaccat tcctcccttg tagttctogc cccctcaaatt 100
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 cagagatgcc tggctacctc gccctgcctt cagcctcaag gggctcagtc 200
 tctttttctc tttggtgcca ccaggacgga gcatggaggt cacagtacct 250
 gccaccctca acgtcctcaa tggctctgac gccgcctgc cctgcacctt 300
 caactcctgc tacacagtga accacaaaca gttctccctg aactggactt 350
 accaggagtg caacaactgc tctgaggaga tgttcctcca gttccgcatg 400
 aagatcatta acctgaagct ggagcgggtt caagaccgag tggagttctc 450
 aggggaacccc agcaagtacg atgtgtcggg gatgctgaga aacgtgcagc 500
 cggaggatga ggggatttac aactgctaca tcatgaaccc ccctgacgag 550
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cgtgtgcctg taatcccagc tatttgggag gctgaggcag gagaatcgct 2100
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<210> 150
 <211> 215
 <212> PRT
 <213> Homo sapiens

<400> 150
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 Glu Val Thr Val Pro Ala Thr Leu Asn Val Leu Asn Gly Ser Asp
 35 40 45
 Ala Arg Leu Pro Cys Thr Phe Asn Ser Cys Tyr Thr Val Asn His
 50 55 60
 Lys Gln Phe Ser Leu Asn Trp Thr Tyr Gln Glu Cys Asn Asn Cys
 65 70 75
 Ser Glu Glu Met Phe Leu Gln Phe Arg Met Lys Ile Ile Asn Leu
 80 85 90
 Lys Leu Glu Arg Phe Gln Asp Arg Val Glu Phe Ser Gly Asn Pro
 95 100 105
 Ser Lys Tyr Asp Val Ser Val Met Leu Arg Asn Val Gln Pro Glu
 110 115 120
 Asp Glu Gly Ile Tyr Asn Cys Tyr Ile Met Asn Pro Pro Asp Arg
 125 130 135
 His Arg Gly His Gly Lys Ile His Leu Gln Val Leu Met Glu Glu
 140 145 150
 Pro Pro Glu Arg Asp Ser Thr Val Ala Val Ile Val Gly Ala Ser
 155 160 165
 Val Gly Gly Phe Leu Ala Val Val Ile Leu Val Leu Met Val Val
 170 175 180
 Lys Cys Val Arg Arg Lys Lys Glu Gln Lys Leu Ser Thr Asp Asp
 185 190 195
 Leu Lys Thr Glu Glu Glu Gly Lys Thr Asp Gly Glu Gly Asn Pro
 200 205 210
 Asp Asp Gly Ala Lys
 215

<210> 151

<211> 524
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 103, 233
<223> unknown base

<400> 151
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gccctgcctt cagcctcagc gggctcagtc tttttttctc tttggtgcca 200
ccaggacgga gcatggaggt ccacagtacc tgnccaccct caacgtcctc 250
aatggctctg acgcccgcct gccctgccct tcaactcctg ctacacagtg 300
aaccacaaac agttctccct gaactggact taccaggagt gcaacaactg 350
ctctgaggag atgttctcct agttccgcat gaagatcatt aacctgaagc 400
tggagcgggt tcaagaccgc gtggagttct caggaaccc cagcaagtac 450
gatgtgtcgg tgatgctgag aaacgtgcag ccggaggatg aggggattta 500
caactgctac atcatgaacc cccc 524

<210> 152
<211> 368
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 56, 123
<223> unknown base

<400> 152
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ccctgaactg gatttaccag gagtgaaca actggctctg aggagatgtt 200
cctccagttc ccgcatggaa gatcatttaa cctgaaagct ggaagcgggt 250
ttcaagaacc gcggtgaagt ttctcagga accccagcaa gtacgatgtg 300
tcggtgatgc tgagaaacgt gcagccggag gatgagggga tttacaactg 350
ctacatcatg aaccccc 368

<210> 153
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 153
 acggagcatg gaggtccaca gtac 24

<210> 154
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 154
 gcacgtttct cagcatcacc gac 23

<210> 155
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 155
 gcgctgccct gcaccttcaa ctctgctac acagtgaacc acaaacagtt 50

<210> 156
 <211> 2680
 <212> DNA
 <213> Homo sapiens

<400> 156
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 cgcggaccca gcgctcccgg ccggacgtca cccccagtg gtgctgggtcc 150
 ctggtgattt gggtaaccaa ctggaagcca agctggacaa gccgacagt 200
 gtgcactacc tctgctccaa gaagaccgaa agctacttca caatctggct 250
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 gccttggtggg ctggggctac acacgggggtg aggatgtccg agggggtccc 500

tatgactggc gccgagcccc aaatgaaaac gggccctact tcctggccct 550
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 cagggctgcc ttcattggcag taggctctaa gtgggtgact ggccacaggc 2450
 cgagaaaagg gtacagcctc taggtggggg tcccaaagac gccttcaggc 2500
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 ttgcatacat gcctggcatc tgtctccctt tgttcctgag tggccccaca 2600
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 atgctgtaaa aaaaaaaaaa aaaaaaaaaa 2680

<210> 157

<211> 412

<212> PRT

<213> Artificial

<400> 157

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Leu | His | Leu | Arg | Pro | Tyr | Arg | Val | Gly | Leu | Leu | Pro | Asp |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gly | Leu | Leu | Phe | Leu | Leu | Leu | Leu | Leu | Met | Leu | Leu | Ala | Asp | Pro |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Ala | Leu | Pro | Ala | Gly | Arg | His | Pro | Pro | Val | Val | Leu | Val | Pro | Gly |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Asp | Leu | Gly | Asn | Gln | Leu | Glu | Ala | Lys | Leu | Asp | Lys | Pro | Thr | Val |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Val | His | Tyr | Leu | Cys | Ser | Lys | Lys | Thr | Glu | Ser | Tyr | Phe | Thr | Ile |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Trp | Leu | Asn | Leu | Glu | Leu | Leu | Leu | Pro | Val | Ile | Ile | Asp | Cys | Trp |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Ile | Asp | Asn | Ile | Arg | Leu | Val | Tyr | Asn | Lys | Thr | Ser | Arg | Ala | Thr |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Gln | Phe | Pro | Asp | Gly | Val | Asp | Val | Arg | Val | Pro | Gly | Phe | Gly | Lys |

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 110 | | 115 | | 120 |
| Thr Phe Ser Leu | Glu Phe Leu Asp Pro | Ser Lys Ser Ser Val | Gly | | |
| | 125 | 130 | 135 | | |
| Ser Tyr Phe His | Thr Met Val Glu Ser | Leu Val Gly Trp Gly | Tyr | | |
| | 140 | 145 | 150 | | |
| Thr Arg Gly Glu | Asp Val Arg Gly Ala | Pro Tyr Asp Trp Arg | Arg | | |
| | 155 | 160 | 165 | | |
| Ala Pro Asn Glu | Asn Gly Pro Tyr Phe | Leu Ala Leu Arg Glu | Met | | |
| | 170 | 175 | 180 | | |
| Ile Glu Glu Met | Tyr Gln Leu Tyr Gly | Gly Pro Val Val Leu | Val | | |
| | 185 | 190 | 195 | | |
| Ala His Ser Met | Gly Asn Met Tyr Thr | Leu Tyr Phe Leu Gln | Arg | | |
| | 200 | 205 | 210 | | |
| Gln Pro Gln Ala | Trp Lys Asp Lys Tyr | Ile Arg Ala Phe Val | Ser | | |
| | 215 | 220 | 225 | | |
| Leu Gly Ala Pro | Trp Gly Gly Val Ala | Lys Thr Leu Arg Val | Leu | | |
| | 230 | 235 | 240 | | |
| Ala Ser Gly Asp | Asn Asn Arg Ile Pro | Val Ile Gly Pro Leu | Lys | | |
| | 245 | 250 | 255 | | |
| Ile Arg Glu Gln | Gln Arg Ser Ala Val | Ser Thr Ser Trp Leu | Leu | | |
| | 260 | 265 | 270 | | |
| Pro Tyr Asn Tyr | Thr Trp Ser Pro Glu | Lys Val Phe Val Gln | Thr | | |
| | 275 | 280 | 285 | | |
| Pro Thr Ile Asn | Tyr Thr Leu Arg Asp | Tyr Arg Lys Phe Phe | Gln | | |
| | 290 | 295 | 300 | | |
| Asp Ile Gly Phe | Glu Asp Gly Trp Leu | Met Arg Gln Asp Thr | Glu | | |
| | 305 | 310 | 315 | | |
| Gly Leu Val Glu | Ala Thr Met Pro Pro | Gly Val Gln Leu His | Cys | | |
| | 320 | 325 | 330 | | |
| Leu Tyr Gly Thr | Gly Val Pro Thr Pro | Asp Ser Phe Tyr Tyr | Glu | | |
| | 335 | 340 | 345 | | |
| Ser Phe Pro Asp | Arg Asp Pro Lys Ile | Cys Phe Gly Asp Gly | Asp | | |
| | 350 | 355 | 360 | | |
| Gly Thr Val Asn | Leu Lys Ser Ala Leu | Gln Cys Gln Ala Trp | Gln | | |
| | 365 | 370 | 375 | | |
| Ser Arg Gln Glu | His Gln Val Leu Leu | Gln Glu Leu Pro Gly | Ser | | |
| | 380 | 385 | 390 | | |
| Glu His Ile Glu | Met Leu Ala Asn Ala | Thr Thr Leu Ala Tyr | Leu | | |
| | 395 | 400 | 405 | | |

Lys Arg Val Leu Gly Pro
410

<210> 158

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 158

ctggggctac acacggggtg agg 23

<210> 159

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 159

ggtgccgctg cagaaagtag agcg 24

<210> 160

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 160

gccccaaatg aaaacggggc ctacttcctg gccctccgag agatg 45

<210> 161

<211> 1512

<212> DNA

<213> Homo sapiens

<400> 161

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atggagagcg gggcctacgg cgcggccaag gcgggagggt ccttcgacct 100

gcggcgcttc ctgacgcagc cgcagggtgtt ggcgcgcgcc gtgtgcttgg 150

tcttcgcctt gatcgtgttc tctgcatct atggtgaggg ctacagcaat 200

gcccacgagt ctaagcagat gtactgcgtg ttcaaccgca acgaggatgc 250

ctgccgctat ggcagtgcca tcgggggtgct ggccttcctg gcctcggcct 300

tcttcttgggt ggtcgacgag tatttcccc agatcagcaa cgccactgac 350

cgcaagtacc tggtcattgg tgacctgctc ttctcagctc tctggacctt 400

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Val | Cys | Leu | Val | Phe | Ala | Leu | Ile | Val | Phe | Ser | Cys | Ile | Tyr | Gly | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Glu | Gly | Tyr | Ser | Asn | Ala | His | Glu | Ser | Lys | Gln | Met | Tyr | Cys | Val | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Phe | Asn | Arg | Asn | Glu | Asp | Ala | Cys | Arg | Tyr | Gly | Ser | Ala | Ile | Gly | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Val | Leu | Ala | Phe | Leu | Ala | Ser | Ala | Phe | Phe | Leu | Val | Val | Asp | Ala | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Tyr | Phe | Pro | Gln | Ile | Ser | Asn | Ala | Thr | Asp | Arg | Lys | Tyr | Leu | Val | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Ile | Gly | Asp | Leu | Leu | Phe | Ser | Ala | Leu | Trp | Thr | Phe | Leu | Trp | Phe | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Val | Gly | Phe | Cys | Phe | Leu | Thr | Asn | Gln | Trp | Ala | Val | Thr | Asn | Pro | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Lys | Asp | Val | Leu | Val | Gly | Ala | Asp | Ser | Val | Arg | Ala | Ala | Ile | Thr | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Phe | Ser | Phe | Phe | Ser | Ile | Phe | Ser | Trp | Gly | Val | Leu | Ala | Ser | Leu | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ala | Tyr | Gln | Arg | Tyr | Lys | Ala | Gly | Val | Asp | Asp | Phe | Ile | Gln | Asn | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Tyr | Val | Asp | Pro | Thr | Pro | Asp | Pro | Asn | Thr | Ala | Tyr | Ala | Ser | Tyr | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Pro | Gly | Ala | Ser | Val | Asp | Asn | Tyr | Gln | Gln | Pro | Pro | Phe | Thr | Gln | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Asn | Ala | Glu | Thr | Thr | Glu | Gly | Tyr | Gln | Pro | Pro | Pro | Val | Tyr | | |
| | | | | 215 | | | | | 220 | | | | | | |

<210> 163

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 163

tggtcttcgc cttgatcgtg ttct 24

<210> 164

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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 ctggttcatt ctccaaatcc ccgagcaccc ccggctgatg ctgagccccg 550
 aggtggtgca ggcactgctg gtggaggagc tgctgtccac agtcaacagc 600
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 agtgatcctg gaagccagtg tgaaagacat agctgcattg aattccacgc 700
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| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Pro | Val | Ala | Glu | Ala | Pro | Gln | Val | Ala | Gly | Gly | Gln | Gly | Asp | 1 | 5 | 10 | 15 |
| Gly | Gly | Asp | Gly | Glu | Glu | Ala | Glu | Pro | Glu | Gly | Met | Phe | Lys | Ala | 20 | 25 | 30 | |
| Cys | Glu | Asp | Ser | Lys | Arg | Lys | Ala | Arg | Gly | Tyr | Leu | Arg | Leu | Val | 35 | 40 | 45 | |
| Pro | Leu | Phe | Val | Leu | Leu | Ala | Leu | Leu | Val | Leu | Ala | Ser | Ala | Gly | 50 | 55 | 60 | |
| Val | Leu | Leu | Trp | Tyr | Phe | Leu | Gly | Tyr | Lys | Ala | Glu | Val | Met | Val | 65 | 70 | 75 | |
| Ser | Gln | Val | Tyr | Ser | Gly | Ser | Leu | Arg | Val | Leu | Asn | Arg | His | Phe | 80 | 85 | 90 | |
| Ser | Gln | Asp | Leu | Thr | Arg | Arg | Glu | Ser | Ser | Ala | Phe | Arg | Ser | Glu | 95 | 100 | 105 | |
| Thr | Ala | Lys | Ala | Gln | Lys | Met | Leu | Lys | Glu | Leu | Ile | Thr | Ser | Thr | 110 | 115 | 120 | |
| Arg | Leu | Gly | Thr | Tyr | Tyr | Asn | Ser | Ser | Ser | Val | Tyr | Ser | Phe | Gly | 125 | 130 | 135 | |
| Glu | Gly | Pro | Leu | Thr | Cys | Phe | Phe | Trp | Phe | Ile | Leu | Gln | Ile | Pro | 140 | 145 | 150 | |
| Glu | His | Arg | Arg | Leu | Met | Leu | Ser | Pro | Glu | Val | Val | Gln | Ala | Leu | 155 | 160 | 165 | |
| Leu | Val | Glu | Glu | Leu | Leu | Ser | Thr | Val | Asn | Ser | Ser | Ala | Ala | Val | 170 | 175 | 180 | |
| Pro | Tyr | Arg | Ala | Glu | Tyr | Glu | Val | Asp | Pro | Glu | Gly | Leu | Val | Ile | 185 | 190 | 195 | |
| Leu | Glu | Ala | Ser | Val | Lys | Asp | Ile | Ala | Ala | Leu | Asn | Ser | Thr | Leu | 200 | 205 | 210 | |
| Gly | Cys | Tyr | Arg | Tyr | Ser | Tyr | Val | Gly | Gln | Gly | Gln | Val | Leu | Arg | 215 | 220 | 225 | |
| Leu | Lys | Gly | Pro | Asp | His | Leu | Ala | Ser | Ser | Cys | Leu | Trp | His | Leu | 230 | 235 | 240 | |
| Gln | Gly | Pro | Lys | Asp | Leu | Met | Leu | Lys | Leu | Arg | Leu | Glu | Trp | Thr | 245 | 250 | 255 | |
| Leu | Ala | Glu | Cys | Arg | Asp | Arg | Leu | Ala | Met | Tyr | Asp | Val | Ala | Gly | 260 | 265 | 270 | |
| Pro | Leu | Glu | Lys | Arg | Leu | Ile | Thr | Ser | Val | Tyr | Gly | Cys | Ser | Arg | 275 | 280 | 285 | |
| Gln | Glu | Pro | Val | Val | Glu | Val | Leu | Ala | Ser | Gly | Ala | Ile | Met | Ala | | | | |

| | | | |
|-----------------|---------------------|---------------------|-----|
| Val Val Trp Lys | Lys Gly Leu His Ser | Tyr Tyr Asp Pro Phe | Val |
| | 305 | 310 | 315 |
| Leu Ser Val Gln | Pro Val Val Phe Gln | Ala Cys Glu Val Asn | Leu |
| | 320 | 325 | 330 |
| Thr Leu Asp Asn | Arg Leu Asp Ser Gln | Gly Val Leu Ser Thr | Pro |
| | 335 | 340 | 345 |
| Tyr Phe Pro Ser | Tyr Tyr Ser Pro Gln | Thr His Cys Ser Trp | His |
| | 350 | 355 | 360 |
| Leu Thr Val Pro | Ser Leu Asp Tyr Gly | Leu Ala Leu Trp Phe | Asp |
| | 365 | 370 | 375 |
| Ala Tyr Ala Leu | Arg Arg Gln Lys Tyr | Asp Leu Pro Cys Thr | Gln |
| | 380 | 385 | 390 |
| Gly Gln Trp Thr | Ile Gln Asn Arg Arg | Leu Cys Gly Leu Arg | Ile |
| | 395 | 400 | 405 |
| Leu Gln Pro Tyr | Ala Glu Arg Ile Pro | Val Val Ala Thr Ala | Gly |
| | 410 | 415 | 420 |
| Ile Thr Ile Asn | Phe Thr Ser Gln Ile | Ser Leu Thr Gly Pro | Gly |
| | 425 | 430 | 435 |
| Val Arg Val His | Tyr Gly Leu Tyr Asn | Gln Ser Asp Pro Cys | Pro |
| | 440 | 445 | 450 |
| Gly Glu Phe Leu | Cys Ser Val Asn Gly | Leu Cys Val Pro Ala | Cys |
| | 455 | 460 | 465 |
| Asp Gly Val Lys | Asp Cys Pro Asn Gly | Leu Asp Glu Arg Asn | Cys |
| | 470 | 475 | 480 |
| Val Cys Arg Ala | Thr Phe Gln Cys Lys | Glu Asp Ser Thr Cys | Ile |
| | 485 | 490 | 495 |
| Ser Leu Pro Lys | Val Cys Asp Gly Gln | Pro Asp Cys Leu Asn | Gly |
| | 500 | 505 | 510 |
| Ser Asp Glu Glu | Gln Cys Gln Glu Gly | Val Pro Cys Gly Thr | Phe |
| | 515 | 520 | 525 |
| Thr Phe Gln Cys | Glu Asp Arg Ser Cys | Val Lys Lys Pro Asn | Pro |
| | 530 | 535 | 540 |
| Gln Cys Asp Gly | Arg Pro Asp Cys Arg | Asp Gly Ser Asp Glu | Glu |
| | 545 | 550 | 555 |
| His Cys Asp Cys | Gly Leu Gln Gly Pro | Ser Ser Arg Ile Val | Gly |
| | 560 | 565 | 570 |
| Gly Ala Val Ser | Ser Glu Gly Glu Trp | Pro Trp Gln Ala Ser | Leu |
| | 575 | 580 | 585 |

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<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 171

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<210> 172

<211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 172
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 <210> 173
 <211> 50
 <212> DNA
 <213> Artificial Sequence

 <220>
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 tgcctatgca ctgaggaggc agaag 25

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 aggcaggac acagagtcca ttcac 25

 <210> 176
 <211> 50
 <212> DNA
 <213> Artificial Sequence

 <220>
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 <210> 177
 <211> 1510
 <212> DNA
 <213> Homo sapiens

<400> 177

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aaaaaaaaaa 1510

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<211> 354

<212> PRT

<213> Homo sapiens

<400> 178

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Leu Glu Asp Lys Leu His Lys Pro Lys Ala Thr Gln Thr Glu Val
35 40 45

Lys Pro Ser Val Arg Phe Asn Leu Arg Thr Ser Lys Asp Pro Glu
50 55 60

His Glu Gly Cys Tyr Leu Ser Val Gly His Ser Gln Pro Leu Glu
65 70 75

Asp Cys Ser Phe Asn Met Thr Ala Lys Thr Phe Phe Ile Ile His
80 85 90

Gly Trp Thr Met Ser Gly Ile Phe Glu Asn Trp Leu His Lys Leu
95 100 105

Val Ser Ala Leu His Thr Arg Glu Lys Asp Ala Asn Val Val Val
110 115 120

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Val Asp Trp Leu Pro Leu Ala His Gln Leu Tyr Thr Asp Ala Val
      125                      130                      135
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Asn Asn Thr Arg Val Val Gly His Ser Ile Ala Arg Met Leu Asp
140 145 150

Trp Leu Gln Glu Lys Asp Asp Phe Ser Leu Gly Asn Val His Leu
155 160 165

Ile Gly Tyr Ser Leu Gly Ala His Val Ala Gly Tyr Ala Gly Asn
170 175 180

Phe Val Lys Gly Thr Val Gly Arg Ile Thr Gly Leu Asp Pro Ala
185 190 195

Gly Pro Met Phe Glu Gly Ala Asp Ile His Lys Arg Leu Ser Pro
200 205 210

Asp Asp Ala Asp Phe Val Asp Val Leu His Thr Tyr Thr Arg Ser
215 220 225

Phe Gly Leu Ser Ile Gly Ile Gln Met Pro Val Gly His Ile Asp
230 235 240

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Tyr | Pro | Asn | Gly | Gly | Asp | Phe | Gln | Pro | Gly | Cys | Gly | Leu | Asn |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Asp | Val | Leu | Gly | Ser | Ile | Ala | Tyr | Gly | Thr | Ile | Thr | Glu | Val | Val |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Lys | Cys | Glu | His | Glu | Arg | Ala | Val | His | Leu | Phe | Val | Asp | Ser | Leu |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Val | Asn | Gln | Asp | Lys | Pro | Ser | Phe | Ala | Phe | Gln | Cys | Thr | Asp | Ser |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Asn | Arg | Phe | Lys | Lys | Gly | Ile | Cys | Leu | Ser | Cys | Arg | Lys | Asn | Arg |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Cys | Asn | Ser | Ile | Gly | Tyr | Asn | Ala | Lys | Lys | Met | Arg | Asn | Lys | Arg |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Asn | Ser | Lys | Met | Tyr | Leu | Lys | Thr | Arg | Ala | Gly | Met | Pro | Phe | Arg |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Gly | Asn | Leu | Gln | Ser | Leu | Glu | Cys | Pro | | | | | | |
| | | | | 350 | | | | | | | | | | |

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<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 179

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<210> 180

<211> 26

<212> DNA

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<220>

<223> Synthetic oligonucleotide probe

<400> 180

gctattacaa cggttcttgc ggcagc 26

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<212> DNA

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<223> Synthetic oligonucleotide probe

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ttgactctct ggtgaatcag gacaagccga gttttgcctt ccag 44

<210> 182

<211> 3240
<212> DNA
<213> Homo sapiens

<400> 182

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<210> 183
 <211> 713
 <212> PRT
 <213> Homo sapiens

<400> 183
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 35 40 45
 Leu Val Arg Asp Ser Arg Thr Ser Pro Ala Asn Cys Thr Trp Leu
 50 55 60
 Ile Leu Gly Ser Lys Glu Gln Thr Val Thr Ile Arg Phe Gln Lys
 65 70 75
 Leu His Leu Ala Cys Gly Ser Glu Arg Leu Thr Leu Arg Ser Pro
 80 85 90
 Leu Gln Pro Leu Ile Ser Leu Cys Glu Ala Pro Pro Ser Pro Leu
 95 100 105
 Gln Leu Pro Gly Gly Asn Val Thr Ile Thr Tyr Ser Tyr Ala Gly
 110 115 120
 Ala Arg Ala Pro Met Gly Gln Gly Phe Leu Leu Ser Tyr Ser Gln
 125 130 135
 Asp Trp Leu Met Cys Leu Gln Glu Glu Phe Gln Cys Leu Asn His
 140 145 150
 Arg Cys Val Ser Ala Val Gln Arg Cys Asp Gly Val Asp Ala Cys
 155 160 165
 Gly Asp Gly Ser Asp Glu Ala Gly Cys Ser Ser Asp Pro Phe Pro

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------|
| | | | | 170 | | | | | 175 | | | | | 180 |
| Gly | Leu | Thr | Pro | Arg 185 | Pro | Val | Pro | Ser | Leu | Pro | Cys | Asn | Val | Thr 195 |
| Leu | Glu | Asp | Phe | Tyr 200 | Gly | Val | Phe | Ser | Ser | Pro | Gly | Tyr | Thr | His 210 |
| Leu | Ala | Ser | Val | Ser 215 | His | Pro | Gln | Ser | Cys | His | Trp | Leu | Leu | Asp 225 |
| Pro | His | Asp | Gly | Arg 230 | Arg | Leu | Ala | Val | Arg | Phe | Thr | Ala | Leu | Asp 240 |
| Leu | Gly | Phe | Gly | Asp 245 | Ala | Val | His | Val | Tyr | Asp | Gly | Pro | Gly | Pro 255 |
| Pro | Glu | Ser | Ser | Arg 260 | Leu | Leu | Arg | Ser | Leu | Thr | His | Phe | Ser | Asn 270 |
| Gly | Lys | Ala | Val | Thr 275 | Val | Glu | Thr | Leu | Ser | Gly | Gln | Ala | Val | Val 285 |
| Ser | Tyr | His | Thr | Val 290 | Ala | Trp | Ser | Asn | Gly | Arg | Gly | Phe | Asn | Ala 300 |
| Thr | Tyr | His | Val | Arg 305 | Gly | Tyr | Cys | Leu | Pro | Trp | Asp | Arg | Pro | Cys 315 |
| Gly | Leu | Gly | Ser | Gly 320 | Leu | Gly | Ala | Gly | Glu | Gly | Leu | Gly | Glu | Arg 330 |
| Cys | Tyr | Ser | Glu | Ala 335 | Gln | Arg | Cys | Asp | Gly | Ser | Trp | Asp | Cys | Ala 345 |
| Asp | Gly | Thr | Asp | Glu 350 | Glu | Asp | Cys | Pro | Gly | Cys | Pro | Pro | Gly | His 360 |
| Phe | Pro | Cys | Gly | Ala 365 | Ala | Gly | Thr | Ser | Gly | Ala | Thr | Ala | Cys | Tyr 375 |
| Leu | Pro | Ala | Asp | Arg 380 | Cys | Asn | Tyr | Gln | Thr | Phe | Cys | Ala | Asp | Gly 390 |
| Ala | Asp | Glu | Arg | Arg 395 | Cys | Arg | His | Cys | Gln | Pro | Gly | Asn | Phe | Arg 405 |
| Cys | Arg | Asp | Glu | Lys 410 | Cys | Val | Tyr | Glu | Thr | Trp | Val | Cys | Asp | Gly 420 |
| Gln | Pro | Asp | Cys | Ala 425 | Asp | Gly | Ser | Asp | Glu | Trp | Asp | Cys | Ser | Tyr 435 |
| Val | Leu | Pro | Arg | Lys 440 | Val | Ile | Thr | Ala | Ala | Val | Ile | Gly | Ser | Leu 450 |
| Val | Cys | Gly | Leu | Leu 455 | Leu | Val | Ile | Ala | Leu | Gly | Cys | Thr | Cys | Lys 465 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Tyr | Ala | Ile | Arg | Thr | Gln | Glu | Tyr | Ser | Ile | Phe | Ala | Pro | Leu | |
| | | | | 470 | | | | | 475 | | | | | 480 | |
| Ser | Arg | Met | Glu | Ala | Glu | Ile | Val | Gln | Gln | Gln | Ala | Pro | Pro | Ser | |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Tyr | Gly | Gln | Leu | Ile | Ala | Gln | Gly | Ala | Ile | Pro | Pro | Val | Glu | Asp | |
| | | | | 500 | | | | | 505 | | | | | 510 | |
| Phe | Pro | Thr | Glu | Asn | Pro | Asn | Asp | Asn | Ser | Val | Leu | Gly | Asn | Leu | |
| | | | | 515 | | | | | 520 | | | | | 525 | |
| Arg | Ser | Leu | Leu | Gln | Ile | Leu | Arg | Gln | Asp | Met | Thr | Pro | Gly | Gly | |
| | | | | 530 | | | | | 535 | | | | | 540 | |
| Gly | Pro | Gly | Ala | Arg | Arg | Arg | Gln | Arg | Gly | Arg | Leu | Met | Arg | Arg | |
| | | | | 545 | | | | | 550 | | | | | 555 | |
| Leu | Val | Arg | Arg | Leu | Arg | Arg | Trp | Gly | Leu | Leu | Pro | Arg | Thr | Asn | |
| | | | | 560 | | | | | 565 | | | | | 570 | |
| Thr | Pro | Ala | Arg | Ala | Ser | Glu | Ala | Arg | Ser | Gln | Val | Thr | Pro | Ser | |
| | | | | 575 | | | | | 580 | | | | | 585 | |
| Ala | Ala | Pro | Leu | Glu | Ala | Leu | Asp | Gly | Gly | Thr | Gly | Pro | Ala | Arg | |
| | | | | 590 | | | | | 595 | | | | | 600 | |
| Glu | Gly | Gly | Ala | Val | Gly | Gly | Gln | Asp | Gly | Glu | Gln | Ala | Pro | Pro | |
| | | | | 605 | | | | | 610 | | | | | 615 | |
| Leu | Pro | Ile | Lys | Ala | Pro | Leu | Pro | Ser | Ala | Ser | Thr | Ser | Pro | Ala | |
| | | | | 620 | | | | | 625 | | | | | 630 | |
| Pro | Thr | Thr | Val | Pro | Glu | Ala | Pro | Gly | Pro | Leu | Pro | Ser | Leu | Pro | |
| | | | | 635 | | | | | 640 | | | | | 645 | |
| Leu | Glu | Pro | Ser | Leu | Leu | Ser | Gly | Val | Val | Gln | Ala | Leu | Arg | Gly | |
| | | | | 650 | | | | | 655 | | | | | 660 | |
| Arg | Leu | Leu | Pro | Ser | Leu | Gly | Pro | Pro | Gly | Pro | Thr | Arg | Ser | Pro | |
| | | | | 665 | | | | | 670 | | | | | 675 | |
| Pro | Gly | Pro | His | Thr | Ala | Val | Leu | Ala | Leu | Glu | Asp | Glu | Asp | Asp | |
| | | | | 680 | | | | | 685 | | | | | 690 | |
| Val | Leu | Leu | Val | Pro | Leu | Ala | Glu | Pro | Gly | Val | Trp | Val | Ala | Glu | |
| | | | | 695 | | | | | 700 | | | | | 705 | |
| Ala | Glu | Asp | Glu | Pro | Leu | Leu | Thr | | | | | | | | |
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<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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ggctgtcact gtggagacac 20

<210> 185
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<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 185
gcaaggtcat tacagctg 18

<210> 186
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 186
agaacatagg agcagtccca ctc 23

<210> 187
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<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 187
tgcctgctgc tgcacaatct cag 23

<210> 188
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 188
ggctattgct tgccttgga cagacctgt ggcttaggct ctggc 45

<210> 189
<211> 663
<212> DNA
<213> Homo sapiens

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cgagctgggc gagaagtagg ggagggcggt gctccgccgc ggtggcggtt 50
gctatcgctt cgcagaacct actcaggcag ccagctgaga agagttgagg 100
gaaagtgcctg ctgctgggtc tgcagacgcg atggataacg tgcagccgaa 150

Val Leu

<210> 191
<211> 495
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 78, 212, 234, 487
<223> unknown base

<400> 191
gggcgagaag taggggaggg cgtgttccgc cgcggtggcg gttgctatcg 50
ttttgcagaa cctactcagg cagccagntg agaagagttg agggaaagtg 100
ctgctgctgg gtctgcagac gcgatggata acgtgcagcc gaaaataaaa 150
catcgcccct tctgcttcag tgtgaaaggc cacgtgaaga tgctgcggct 200
ggcactaact gngacatcta tgaccttttt tatnatcgca caagcccctg 250
aaccatatat tgttatcact ggatttgaag tcaccgttat cttatttttc 300
atacttttat atgtactcag acttgatcga ttaatgaagt ggttattttg 350
gcctttgctt gatattatca actcactggg aacaacagta ttcatgctca 400
tcgtatctgt gttggcactg ataccagaaa ccacaacatt gacagttggg 450
ggaggggtgt ttgcacttgt gacagcagta tgctgtnttg ccgac 495

<210> 192
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 192
cgttttgcag aacctactca ggcag 25

<210> 193
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 193
cctccaccaa ctgtcaatgt tgtgg 25

<210> 194
<211> 40

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 194
aaagtgtctg tgctgggtct gcagacgcga tggataacgt 40

<210> 195
<211> 1879
<212> DNA
<213> Homo sapien

<400> 195
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cactggccccg ggcgtgctg ctgcctctgc tggcccagtg gctcctgcgc 150
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acacaagcaa acatccccaa cgttttctcc atgcagatgt gtggagccgg 800
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| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gln | Ile | Leu | Val | Asp | Thr | Gly | Ser | Ser | Asn | Phe | Ala | Val | Ala | Gly | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Thr | Pro | His | Ser | Tyr | Ile | Asp | Thr | Tyr | Phe | Asp | Thr | Glu | Arg | Ser | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Ser | Thr | Tyr | Arg | Ser | Lys | Gly | Phe | Asp | Val | Thr | Val | Lys | Tyr | Thr | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Gln | Gly | Ser | Trp | Thr | Gly | Phe | Val | Gly | Glu | Asp | Leu | Val | Thr | Ile | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Pro | Lys | Gly | Phe | Asn | Thr | Ser | Phe | Leu | Val | Asn | Ile | Ala | Thr | Ile | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Phe | Glu | Ser | Glu | Asn | Phe | Phe | Leu | Pro | Gly | Ile | Lys | Trp | Asn | Gly | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ile | Leu | Gly | Leu | Ala | Tyr | Ala | Thr | Leu | Ala | Lys | Pro | Ser | Ser | Ser | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Leu | Glu | Thr | Phe | Phe | Asp | Ser | Leu | Val | Thr | Gln | Ala | Asn | Ile | Pro | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Asn | Val | Phe | Ser | Met | Gln | Met | Cys | Gly | Ala | Gly | Leu | Pro | Val | Ala | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Gly | Ser | Gly | Thr | Asn | Gly | Gly | Ser | Leu | Val | Leu | Gly | Gly | Ile | Glu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Pro | Ser | Leu | Tyr | Lys | Gly | Asp | Ile | Trp | Tyr | Thr | Pro | Ile | Lys | Glu | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Glu | Trp | Tyr | Tyr | Gln | Ile | Glu | Ile | Leu | Lys | Leu | Glu | Ile | Gly | Gly | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Gln | Ser | Leu | Asn | Leu | Asp | Cys | Arg | Glu | Tyr | Asn | Ala | Asp | Lys | Ala | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ile | Val | Asp | Ser | Gly | Thr | Thr | Leu | Leu | Arg | Leu | Pro | Gln | Lys | Val | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Phe | Asp | Ala | Val | Val | Glu | Ala | Val | Ala | Arg | Ala | Ser | Leu | Ile | Pro | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Glu | Phe | Ser | Asp | Gly | Phe | Trp | Thr | Gly | Ser | Gln | Leu | Ala | Cys | Trp | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Thr | Asn | Ser | Glu | Thr | Pro | Trp | Ser | Tyr | Phe | Pro | Lys | Ile | Ser | Ile | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Tyr | Leu | Arg | Asp | Glu | Asn | Ser | Ser | Arg | Ser | Phe | Arg | Ile | Thr | Ile | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Leu | Pro | Gln | Leu | Tyr | Ile | Gln | Pro | Met | Met | Gly | Ala | Gly | Leu | Asn | |
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| Tyr | Glu | Cys | Tyr | Arg | Phe | Gly | Ile | Ser | Pro | Ser | Thr | Asn | Ala | Leu | |

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 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 200
 gccttggtc gttctcttc 19

<210> 201
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 201
 ggtcctgtgc ctggatgg 18

<210> 202
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 202
 gacaagacta cctccgttg tc 22

<210> 203
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 203
 tgatgcacag ttcagcacct gttg 24

<210> 204
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 204
 cgctccaagg gctttgacgt cacagtgaag tacacacaag gaagctg 47

<210> 205
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 <212> DNA

<213> Homo sapiens

<400> 205

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<210> 206
 <211> 377
 <212> PRT
 <213> Homo sapiens

<400> 206
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 35 40 45
 Ser Gly Ile Gly Lys Met Thr Ala Leu Glu Leu Ala Arg Arg Gly
 50 55 60
 Ala Arg Val Val Leu Ala Cys Arg Ser Gln Glu Arg Gly Glu Ala
 65 70 75
 Ala Ala Phe Asp Leu Arg Gln Glu Ser Gly Asn Asn Glu Val Ile
 80 85 90
 Phe Met Ala Leu Asp Leu Ala Ser Leu Ala Ser Val Arg Ala Phe
 95 100 105
 Ala Thr Ala Phe Leu Ser Ser Glu Pro Arg Leu Asp Ile Leu Ile
 110 115 120
 His Asn Ala Gly Ile Ser Ser Cys Gly Arg Thr Arg Glu Ala Phe
 125 130 135
 Asn Leu Leu Leu Arg Val Asn His Ile Gly Pro Phe Leu Leu Thr
 140 145 150

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 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 208
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<210> 209
 <211> 45
 <212> DNA
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<220>
 <223> Synthetic oligonucleotide probe

<400> 209
 ctttctgagc tctgagccac ggttggacat cctcatccac aatgc 45

<210> 210
 <211> 3716
 <212> DNA
 <213> Homo sapiens

<400> 210
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| cttagcccct | gcagtccccc | tagccccag | gcctcttccc | tctctggccc | 2300 |
| cagcccagct | tccagtgcgc | tgtccagctc | ctcactgtca | tccctggggg | 2350 |
| aggatcaaga | cagcgtgctg | acccctgagg | aggtagccct | gtgcttgga | 2400 |
| ctcagtgagg | gtgaggagac | tcccaggaac | agcgtctctc | ccatgccaa | 2450 |
| ggctccttca | ccccccacca | cctatgggta | catcagcgtc | ccaacagcct | 2500 |
| cagagttcac | ggacatgggc | aggactggag | gaggggtggg | gccaagggg | 2550 |
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| gggctcctta | gccaatgggt | ggggctcagc | ctctgaggac | aatgccgcca | 2650 |
| gcgccagagc | cagccttgtc | agctcctccg | atggctcctt | cctcgctgat | 2700 |
| gctcactttg | cccgggccct | ggcagtggct | gtggatagct | ttggtttcgg | 2750 |
| tctagagccc | agggaggcag | actgcgtctt | catagatgcc | tcatcacctc | 2800 |
| cctccccacg | ggatgagatc | ttcctgacct | ccaacctctc | cctgcccctg | 2850 |
| tgggagtgga | ggccagactg | gttggaagac | atggagggtca | gccacacca | 2900 |
| gcggctggga | aggggggatgc | ctccctggcc | ccctgactct | cagatctctt | 2950 |
| cccagagaag | tcagctccac | tgtcgtatgc | ccaaggctgg | tgctttctct | 3000 |
| gtagattact | cctgaaccgt | gtccctgaga | cttcccagac | gggaatcaga | 3050 |
| accacttctc | ctgtccaccc | acaagacctg | ggctgtgggtg | tgtgggtctt | 3100 |
| ggcctgtgtt | tctctgcagc | tgggggtccac | cttcccaagc | ctccagagag | 3150 |
| ttctccctcc | acgatttgtga | aaacaaatga | aaacaaaatt | agagcaaagc | 3200 |
| tgacctggag | ccctcagggg | gcaaaacatc | atctccacct | gactcctagc | 3250 |
| cactgctttc | tcctctgtgc | catccactcc | caccaccag | ttgttttggc | 3300 |
| ctgaggagca | gccctgcctg | ctgctcttcc | cccaccattt | ggatcacagg | 3350 |
| aagtggagga | gccagaggtg | ccttttgtgga | ggacagcagt | ggctgctggg | 3400 |
| agagggctgt | ggaggaagga | gcttctcgga | gccccctctc | agccttacct | 3450 |
| gggcccctcc | tctagagaag | agctcaactc | tctcccaacc | tcaccatgga | 3500 |
| aagaaaataa | ttatgaatgc | cactgaggca | ctgaggccct | acctcatgcc | 3550 |
| aaacaaagg | ttcaaggctg | ggtctagcga | ggatgctgaa | ggaaggagg | 3600 |
| tatgagaccg | taggtcaaaa | gcaccatcct | cgtactgttg | tcactatgag | 3650 |

| | | | |
|-----------------|---------------------|---------------------|-----|
| Ala Val Trp Leu | Ser Trp Lys Val Ser | Gly Pro Ala Ala Pro | Ala |
| 245 | | 250 | 255 |
| Gln Ser Tyr Thr | Ala Leu Phe Arg Thr | Gln Thr Ala Pro Gly | Gly |
| 260 | | 265 | 270 |
| Gln Gly Ala Pro | Trp Ala Glu Glu Leu | Leu Ala Gly Trp Gln | Ser |
| 275 | | 280 | 285 |
| Ala Glu Leu Gly | Gly Leu His Trp Gly | Gln Asp Tyr Glu Phe | Lys |
| 290 | | 295 | 300 |
| Val Arg Pro Ser | Ser Gly Arg Ala Arg | Gly Pro Asp Ser Asn | Val |
| 305 | | 310 | 315 |
| Leu Leu Leu Arg | Leu Pro Glu Lys Val | Pro Ser Ala Pro Pro | Gln |
| 320 | | 325 | 330 |
| Glu Val Thr Leu | Lys Pro Gly Asn Gly | Thr Val Phe Val Ser | Trp |
| 335 | | 340 | 345 |
| Val Pro Pro Pro | Ala Glu Asn His Asn | Gly Ile Ile Arg Gly | Tyr |
| 350 | | 355 | 360 |
| Gln Val Trp Ser | Leu Gly Asn Thr Ser | Leu Pro Pro Ala Asn | Trp |
| 365 | | 370 | 375 |
| Thr Val Val Gly | Glu Gln Thr Gln Leu | Glu Ile Ala Thr His | Met |
| 380 | | 385 | 390 |
| Pro Gly Ser Tyr | Cys Val Gln Val Ala | Ala Val Thr Gly Ala | Gly |
| 395 | | 400 | 405 |
| Ala Gly Glu Pro | Ser Arg Pro Val Cys | Leu Leu Leu Glu Gln | Ala |
| 410 | | 415 | 420 |
| Met Glu Arg Ala | Thr Gln Glu Pro Ser | Glu His Gly Pro Trp | Thr |
| 425 | | 430 | 435 |
| Leu Glu Gln Leu | Arg Ala Thr Leu Lys | Arg Pro Glu Val Ile | Ala |
| 440 | | 445 | 450 |
| Thr Cys Gly Val | Ala Leu Trp Leu Leu | Leu Leu Gly Thr Ala | Val |
| 455 | | 460 | 465 |
| Cys Ile His Arg | Arg Arg Arg Ala Arg | Val His Leu Gly Pro | Gly |
| 470 | | 475 | 480 |
| Leu Tyr Arg Tyr | Thr Ser Glu Asp Ala | Ile Leu Lys His Arg | Met |
| 485 | | 490 | 495 |
| Asp His Ser Asp | Ser Gln Trp Leu Ala | Asp Thr Trp Arg Ser | Thr |
| 500 | | 505 | 510 |
| Ser Gly Ser Arg | Asp Leu Ser Ser Ser | Ser Ser Leu Ser Ser | Arg |
| 515 | | 520 | 525 |
| Leu Gly Ala Asp | Ala Arg Asp Pro Leu | Asp Cys Arg Arg Ser | Leu |

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 530 | | 535 | | 540 |
| Leu Ser Trp Asp | Ser Arg Ser Pro Gly | Val Pro Leu Leu Pro | Asp | | |
| | 545 | 550 | 555 | | |
| Thr Ser Thr Phe | Tyr Gly Ser Leu Ile | Ala Glu Leu Pro Ser | Ser | | |
| | 560 | 565 | 570 | | |
| Thr Pro Ala Arg | Pro Ser Pro Gln Val | Pro Ala Val Arg Arg | Leu | | |
| | 575 | 580 | 585 | | |
| Pro Pro Gln Leu | Ala Gln Leu Ser Ser | Pro Cys Ser Ser Ser | Asp | | |
| | 590 | 595 | 600 | | |
| Ser Leu Cys Ser | Arg Arg Gly Leu Ser | Ser Pro Arg Leu Ser | Leu | | |
| | 605 | 610 | 615 | | |
| Ala Pro Ala Glu | Ala Trp Lys Ala Lys | Lys Lys Gln Glu Leu | Gln | | |
| | 620 | 625 | 630 | | |
| His Ala Asn Ser | Ser Pro Leu Leu Arg | Gly Ser His Ser Leu | Glu | | |
| | 635 | 640 | 645 | | |
| Leu Arg Ala Cys | Glu Leu Gly Asn Arg | Gly Ser Lys Asn Leu | Ser | | |
| | 650 | 655 | 660 | | |
| Gln Ser Pro Gly | Ala Val Pro Gln Ala | Leu Val Ala Trp Arg | Ala | | |
| | 665 | 670 | 675 | | |
| Leu Gly Pro Lys | Leu Leu Ser Ser Ser | Asn Glu Leu Val Thr | Arg | | |
| | 680 | 685 | 690 | | |
| His Leu Pro Pro | Ala Pro Leu Phe Pro | His Glu Thr Pro Pro | Thr | | |
| | 695 | 700 | 705 | | |
| Gln Ser Gln Gln | Thr Gln Pro Pro Val | Ala Pro Gln Ala Pro | Ser | | |
| | 710 | 715 | 720 | | |
| Ser Ile Leu Leu | Pro Ala Ala Pro Ile | Pro Ile Leu Ser Pro | Cys | | |
| | 725 | 730 | 735 | | |
| Ser Pro Pro Ser | Pro Gln Ala Ser Ser | Leu Ser Gly Pro Ser | Pro | | |
| | 740 | 745 | 750 | | |
| Ala Ser Ser Arg | Leu Ser Ser Ser Ser | Leu Ser Ser Leu Gly | Glu | | |
| | 755 | 760 | 765 | | |
| Asp Gln Asp Ser | Val Leu Thr Pro Glu | Glu Val Ala Leu Cys | Leu | | |
| | 770 | 775 | 780 | | |
| Glu Leu Ser Glu | Gly Glu Glu Thr Pro | Arg Asn Ser Val Ser | Pro | | |
| | 785 | 790 | 795 | | |
| Met Pro Arg Ala | Pro Ser Pro Pro Thr | Thr Tyr Gly Tyr Ile | Ser | | |
| | 800 | 805 | 810 | | |
| Val Pro Thr Ala | Ser Glu Phe Thr Asp | Met Gly Arg Thr Gly | Gly | | |
| | 815 | 820 | 825 | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gly | Val | Gly | Pro | Lys | Gly | Gly | Val | Leu | Leu | Cys | Pro | Pro | Arg | Pro | |
| | | | | 830 | | | | | 835 | | | | | 840 | |
| Cys | Leu | Thr | Pro | Thr | Pro | Ser | Glu | Gly | Ser | Leu | Ala | Asn | Gly | Trp | |
| | | | | 845 | | | | | 850 | | | | | 855 | |
| Gly | Ser | Ala | Ser | Glu | Asp | Asn | Ala | Ala | Ser | Ala | Arg | Ala | Ser | Leu | |
| | | | | 860 | | | | | 865 | | | | | 870 | |
| Val | Ser | Ser | Ser | Asp | Gly | Ser | Phe | Leu | Ala | Asp | Ala | His | Phe | Ala | |
| | | | | 875 | | | | | 880 | | | | | 885 | |
| Arg | Ala | Leu | Ala | Val | Ala | Val | Asp | Ser | Phe | Gly | Phe | Gly | Leu | Glu | |
| | | | | 890 | | | | | 895 | | | | | 900 | |
| Pro | Arg | Glu | Ala | Asp | Cys | Val | Phe | Ile | Asp | Ala | Ser | Ser | Pro | Pro | |
| | | | | 905 | | | | | 910 | | | | | 915 | |
| Ser | Pro | Arg | Asp | Glu | Ile | Phe | Leu | Thr | Pro | Asn | Leu | Ser | Leu | Pro | |
| | | | | 920 | | | | | 925 | | | | | 930 | |
| Leu | Trp | Glu | Trp | Arg | Pro | Asp | Trp | Leu | Glu | Asp | Met | Glu | Val | Ser | |
| | | | | 935 | | | | | 940 | | | | | 945 | |
| His | Thr | Gln | Arg | Leu | Gly | Arg | Gly | Met | Pro | Pro | Trp | Pro | Pro | Asp | |
| | | | | 950 | | | | | 955 | | | | | 960 | |
| Ser | Gln | Ile | Ser | Ser | Gln | Arg | Ser | Gln | Leu | His | Cys | Arg | Met | Pro | |
| | | | | 965 | | | | | 970 | | | | | 975 | |
| Lys | Ala | Gly | Ala | Ser | Pro | Val | Asp | Tyr | Ser | | | | | | |
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<211> 24

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<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 212

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<210> 213

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 213

actgaccttc cagctgagcc acac 24

<210> 214

<211> 50

<212> DNA

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<223> Synthetic oligonucleotide probe

<400> 214

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<211> 2749

<212> DNA

<213> Homo sapiens

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<221> unsure

<222> 1869, 1887

<223> unknown base

<400> 215

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gcgggttcga aggggacact gtgtccctgc agtgcaccta cagggaagag 150
ctgagggacc accggaagta ctggtgcagg aagggtggga tcctcttctc 200
tcgctgctct ggcaccatct atgcagaaga agaaggccag gagacaatga 250
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<211> 332
<212> PRT
<213> Homo sapiens

<400> 216
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Tyr Glu Ala Leu Glu Gly Pro Glu Glu Ile Ser Gly Phe Glu Gly
20 25 30
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35 40 45
His Arg Lys Tyr Trp Cys Arg Lys Gly Gly Ile Leu Phe Ser Arg
50 55 60
Cys Ser Gly Thr Ile Tyr Ala Glu Glu Gly Gln Glu Thr Met
65 70 75
Lys Gly Arg Val Ser Ile Arg Asp Ser Arg Gln Glu Leu Ser Leu
80 85 90
Ile Val Thr Leu Trp Asn Leu Thr Leu Gln Asp Ala Gly Glu Tyr
95 100 105
Trp Cys Gly Val Glu Lys Arg Gly Pro Asp Glu Ser Leu Leu Ile
110 115 120
Ser Leu Phe Val Phe Pro Gly Pro Cys Cys Pro Pro Ser Pro Ser
125 130 135
Pro Thr Phe Gln Pro Leu Ala Thr Thr Arg Leu Gln Pro Lys Ala
140 145 150
Lys Ala Gln Gln Thr Gln Pro Pro Gly Leu Thr Ser Pro Gly Leu
155 160 165
Tyr Pro Ala Ala Thr Thr Ala Lys Gln Gly Lys Thr Gly Ala Glu
170 175 180
Ala Pro Pro Leu Pro Gly Thr Ser Gln Tyr Gly His Glu Arg Thr
185 190 195
Ser Gln Tyr Thr Gly Thr Ser Pro His Pro Ala Thr Ser Pro Pro

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<210> 220
<211> 950
<212> DNA
<213> Homo sapiens

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<210> 221
<211> 146
<212> PRT
<213> Homo sapiens

<400> 221
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Ser Glu Ala Lys Leu Tyr Gly Arg Cys Glu Leu Ala Arg Val Leu
20 25 30

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| His | Asp | Phe | Gly | Leu | Asp | Gly | Tyr | Arg | Gly | Tyr | Ser | Leu | Ala | Asp | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Trp | Val | Cys | Leu | Ala | Tyr | Phe | Thr | Ser | Gly | Phe | Asn | Ala | Ala | Ala | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Leu | Asp | Tyr | Glu | Ala | Asp | Gly | Ser | Thr | Asn | Asn | Gly | Ile | Phe | Gln | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Ile | Asn | Ser | Arg | Arg | Trp | Cys | Ser | Asn | Leu | Thr | Pro | Asn | Val | Pro | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Asn | Val | Cys | Arg | Met | Tyr | Cys | Ser | Asp | Leu | Leu | Asn | Pro | Asn | Leu | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Lys | Asp | Thr | Val | Ile | Cys | Ala | Met | Lys | Ile | Thr | Gln | Glu | Pro | Gln | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Gly | Leu | Gly | Tyr | Trp | Glu | Ala | Trp | Arg | His | His | Cys | Gln | Gly | Lys | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Asp | Leu | Thr | Glu | Trp | Val | Asp | Gly | Cys | Asp | Phe | | | | | |
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<223> Synthetic oligonucleotide probe

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<210> 223

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 223

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<210> 224

<211> 45

<212> DNA

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<220>

<223> Synthetic oligonucleotide probe

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<210> 225

<211> 2049
<212> DNA
<213> Homo sapiens

<400> 225

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| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Phe | Ala | Val | Thr | Arg | Ala | Cys | Ser | Ser | Gly | Glu | Leu | Glu | Lys |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Cys | Gly | Cys | Asp | Arg | Thr | Val | His | Gly | Val | Ser | Pro | Gln | Gly | Phe |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Gln | Trp | Ser | Gly | Cys | Ser | Asp | Asn | Ile | Ala | Tyr | Gly | Val | Ala | Phe |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ser | Gln | Ser | Phe | Val | Asp | Val | Arg | Glu | Arg | Ser | Lys | Gly | Ala | Ser |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Ser | Ser | Arg | Ala | Leu | Met | Asn | Leu | His | Asn | Asn | Glu | Ala | Gly | Arg |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Lys | Ala | Ile | Leu | Thr | His | Met | Arg | Val | Glu | Cys | Lys | Cys | His | Gly |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Val | Ser | Gly | Ser | Cys | Glu | Val | Lys | Thr | Cys | Trp | Arg | Ala | Val | Pro |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Pro | Phe | Arg | Gln | Val | Gly | His | Ala | Leu | Lys | Glu | Lys | Phe | Asp | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ala | Thr | Glu | Val | Glu | Pro | Arg | Arg | Val | Gly | Ser | Ser | Arg | Ala | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Val | Pro | Arg | Asn | Ala | Gln | Phe | Lys | Pro | His | Thr | Asp | Glu | Asp | Leu |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Val | Tyr | Leu | Glu | Pro | Ser | Pro | Asp | Phe | Cys | Glu | Gln | Asp | Met | Arg |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Ser | Gly | Val | Leu | Gly | Thr | Arg | Gly | Arg | Thr | Cys | Asn | Lys | Thr | Ser |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Lys | Ala | Ile | Asp | Gly | Cys | Glu | Leu | Leu | Cys | Cys | Gly | Arg | Gly | Phe |
| | | | | 305 | | | | | 310 | | | | | 315 |
| His | Thr | Ala | Gln | Val | Glu | Leu | Ala | Glu | Arg | Cys | Ser | Cys | Lys | Phe |
| | | | | 320 | | | | | 325 | | | | | 330 |
| His | Trp | Cys | Cys | Phe | Val | Lys | Cys | Arg | Gln | Cys | Gln | Arg | Leu | Val |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Glu | Leu | His | Thr | Cys | Arg | | | | | | | | | |
| | | | | 350 | | | | | | | | | | |

<210> 227

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 227

gctgcagctg caaattccac tgg 23

<210> 228
 <211> 28
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 228
 tgggtgggaga ctgttttaaata tatcggcc 28

<210> 229
 <211> 41
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 229
 tgcttcgtca agtgccggca gtgccagcgg ctcggtggagt t 41

<210> 230
 <211> 1355
 <212> DNA
 <213> Homo sapiens

<400> 230
 cggacgcgtg ggcggacgcg tgggcggacg cgtgggcgga cgcgtgggct 50
 ggggtgcctgc atcgccatgg acaccaccag gtacagcaag tggggcggca 100
 gctccgagga ggtccccgga gggccctggg gacgctgggt gcaactggagc 150
 aggagacccc tcttcttggc cctggctgtc ctggtcacca cagtcttttg 200
 ggctgtgatt ctgagtatcc tattgtccaa ggcctccacg gagcgcgcg 250
 cgctgcttga cggccacgac ctgctgagga caaacgcctc gaagcagacg 300
 gcggcgctgg gtgccctgaa ggaggaggtc ggagactgcc acagctgctg 350
 ctcggggacg caggcgagc tgcagaccac gcgcgcggag cttggggagg 400
 cgcaggcgaa gctgatggag caggagagcg ccctgcggga actgcgtgag 450
 cgcgtgaccc agggcttggc tgaagccggc aggggcccgtg aggacgtccg 500
 cactgagctg ttccgggccc tggaggccgt gaggctccag aacaactcct 550
 gcgagccgtg cccacgctc tggctgtcct tcgagggtc ctgctacttt 600
 ttctctgtgc caaagacgac gtgggcggcg gcgcaggatc actgcgcaga 650
 tgccagcgcg cacctggtga tcgttggggg cctggatgag cagggcttcc 700
 tcactcgga cgcgcgtggc cgtggttact ggctgggcct gagggctgtg 750

cgccatctgg gcaaggttca gggctaccag tgggtggacg gagtctctct 800
cagcttcagc cactggaacc agggagagcc caatgacgct tgggggcgcg 850
agaactgtgt catgatgctg cacacggggc tgtggaacga cgcaccgtgt 900
gacagcgaga aggacggctg gatctgtgag aaaaggcaca actgctgacc 950
ccgcccagtg ccttgagacc gcgcccattg cagcatgtcg ttcctgggg 1000
gctgctcacc tcctgggctc ctggagctga ttgccaaaga gtttttttct 1050
tcctcatcca ccgctgctga gtctcagaaa cacttggccc aacatagccc 1100
tgtccagccc agtgccctggg ctctgggacc tccatgcga cctcatccta 1150
actccactca cgcagacca acctaacctc cactagctcc aaaatccctg 1200
ctcctgcgtc cccgtgatat gcctccactt ctctccctaa ccaaggttag 1250
gtgactgagg actggagctg tttggttttc tcgcattttc caccaaactg 1300
gaagctgttt ttgcagcctg aggaagcatc aataaatatt tgagaaatga 1350
aaaaa 1355

<210> 231
<211> 293
<212> PRT
<213> Homo sapiens

<400> 231
Met Asp Thr Thr Arg Tyr Ser Lys Trp Gly Gly Ser Ser Glu Glu
1 5 10 15
Val Pro Gly Gly Pro Trp Gly Arg Trp Val His Trp Ser Arg Arg
20 25 30
Pro Leu Phe Leu Ala Leu Ala Val Leu Val Thr Thr Val Leu Trp
35 40 45
Ala Val Ile Leu Ser Ile Leu Leu Ser Lys Ala Ser Thr Glu Arg
50 55 60
Ala Ala Leu Leu Asp Gly His Asp Leu Leu Arg Thr Asn Ala Ser
65 70 75
Lys Gln Thr Ala Ala Leu Gly Ala Leu Lys Glu Glu Val Gly Asp
80 85 90
Cys His Ser Cys Cys Ser Gly Thr Gln Ala Gln Leu Gln Thr Thr
95 100 105
Arg Ala Glu Leu Gly Glu Ala Gln Ala Lys Leu Met Glu Gln Glu
110 115 120
Ser Ala Leu Arg Glu Leu Arg Glu Arg Val Thr Gln Gly Leu Ala
125 130 135

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Ala | Gly | Arg | Gly | Arg | Glu | Asp | Val | Arg | Thr | Glu | Leu | Phe | Arg |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Ala | Leu | Glu | Ala | Val | Arg | Leu | Gln | Asn | Asn | Ser | Cys | Glu | Pro | Cys |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Pro | Thr | Ser | Trp | Leu | Ser | Phe | Glu | Gly | Ser | Cys | Tyr | Phe | Phe | Ser |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Val | Pro | Lys | Thr | Thr | Trp | Ala | Ala | Ala | Gln | Asp | His | Cys | Ala | Asp |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Ala | Ser | Ala | His | Leu | Val | Ile | Val | Gly | Gly | Leu | Asp | Glu | Gln | Gly |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Phe | Leu | Thr | Arg | Asn | Thr | Arg | Gly | Arg | Gly | Tyr | Trp | Leu | Gly | Leu |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Arg | Ala | Val | Arg | His | Leu | Gly | Lys | Val | Gln | Gly | Tyr | Gln | Trp | Val |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Asp | Gly | Val | Ser | Leu | Ser | Phe | Ser | His | Trp | Asn | Gln | Gly | Glu | Pro |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Asn | Asp | Ala | Trp | Gly | Arg | Glu | Asn | Cys | Val | Met | Met | Leu | His | Thr |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Gly | Leu | Trp | Asn | Asp | Ala | Pro | Cys | Asp | Ser | Glu | Lys | Asp | Gly | Trp |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Ile | Cys | Glu | Lys | Arg | His | Asn | Cys | | | | | | | |
| | | | | 290 | | | | | | | | | | |

<210> 232
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 232
 gcgagaactg tgtcatgatg ctgc 24

<210> 233
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 233
 gtttctgaga ctcagcagcg gtgg 24

<210> 234
 <211> 50
 <212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 234

caccgtgtga cagcgagaag gacggctgga tctgtgagaa aaggcacaac 50

<210> 235

<211> 1847

<212> DNA

<213> Homo sapiens

<400> 235

gccaggggaa gaggggtgatc cgacccgggg aaggtcgctg ggcagggcga 50
gttgggaaag cggcagcccc cgccgcccc gcagcccctt ctctccttt 100
ctccacgctc ctatctgcct ctcgctggag gccaggcgt gcagcatcga 150
agacaggagg aactggagcc tcattggccg gcccggggcg ccggcctcgg 200
gcttaaatag gagctccggg ctctggctgg gacccgaccg ctgccggccg 250
cgctcccgt gctcctgccg ggtgatggaa aaccccagcc cggccgccgc 300
cctgggcaag gccctctgcy ctctcctcct ggccactctc ggcgccgccg 350
gccagcctct tgggggagag tccatctgtt ccgccagagc cccggccaaa 400
tacagcatca ccttcacggg caagtggagc cagacggcct tcccaagca 450
gtaccccctg ttccgcccc ctgcgcagtg gtcttcgctg ctggggggccg 500
cgcatagctc cgactacagc atgtggagga agaaccagta cgtcagtaac 550
gggctgcgcg actttgcgga gcgcggcgag gcctgggcgc tgatgaagga 600
gatcgaggcg gcgggggagg cgctgcagag cgtgcacgag gtgttttcgg 650
cgcccgcgt cccagcggc accgggcaga cgtcggcgga gctggaggtg 700
cagcgcaggc actcgctggt ctcgtttggt gtgcgcatcg tgcccagccc 750
cgactggttc gtgggctggt acagcctgga cctgtgcgac ggggaccgtt 800
ggcgggaaca ggcggcgctg gacctgtacc cctacgacgc cgggacggac 850
agcggcttca ccttctctc cccaacttc gccaccatcc cgcaggacac 900
ggtgaccgag ataacgtcct cctctcccag ccacccggcc aactccttct 950
actaccgcg gctgaaggcc ctgcctccca tcgccagggt gacactgctg 1000
cggctgcgac agagccccag ggccttcac cctcccgccc cagtctgcc 1050
cagcagggac aatgagattg tagacagcgc ctacagttcca gaaacgccgc 1100

tggactgcga ggtctccctg tggctcgtcct ggggactgtg cggaggccac 1150
 tgtgggagggc tcgggaccaa gagcaggact cgctacgtcc ggggccagcc 1200
 cgccaacaac gggagcccoct gccccgagct cgaagaagag gctgagtgcg 1250
 tccctgataa ctgcgtctaa gaccagagcc ccgcagcccc tggggccccc 1300
 cggagccatg ggggtgtcggg ggctcctgtg caggctcatg ctgcaggcgg 1350
 ccgagggcac aggggggtttc gcgctgctcc tgaccgcggt gaggccgcgc 1400
 cgaccatctc tgcactgaag ggccctctgg tggccggcac gggcattggg 1450
 aaacagcctc ctccctttccc aaccttgctt cttagggggc cccgtgtccc 1500
 gtctgtctc agcctcctcc tcctgcagga taaagtcac cccaaggctc 1550
 cagctactct aaattatgtc tccttataag ttattgctgc tccaggagat 1600
 tgtccttcat cgtccagggg cctggctccc acgtgggtgc agatacctca 1650
 gacctggtgc tctaggctgt gctgagccca ctctcccag ggcgcatcca 1700
 agcggggggcc acttgagaag tgaataaatg gggcggtttc ggaagcgtca 1750
 gtgtttccat gttatggatc tctctgcgtt tgaataaaga ctatctctgt 1800
 tgctcacaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaa 1847

<210> 236
 <211> 331
 <212> PRT
 <213> Homo sapiens

<400> 236
 Met Glu Asn Pro Ser Pro Ala Ala Ala Leu Gly Lys Ala Leu Cys
 1 5 10 15
 Ala Leu Leu Leu Ala Thr Leu Gly Ala Ala Gly Gln Pro Leu Gly
 20 25 30
 Gly Glu Ser Ile Cys Ser Ala Arg Ala Pro Ala Lys Tyr Ser Ile
 35 40 45
 Thr Phe Thr Gly Lys Trp Ser Gln Thr Ala Phe Pro Lys Gln Tyr
 50 55 60
 Pro Leu Phe Arg Pro Pro Ala Gln Trp Ser Ser Leu Leu Gly Ala
 65 70 75
 Ala His Ser Ser Asp Tyr Ser Met Trp Arg Lys Asn Gln Tyr Val
 80 85 90
 Ser Asn Gly Leu Arg Asp Phe Ala Glu Arg Gly Glu Ala Trp Ala
 95 100 105
 Leu Met Lys Glu Ile Glu Ala Ala Gly Glu Ala Leu Gln Ser Val

[illegible]

<210> 237

<211> 22

<212> DNA

<213> Artificial Sequence

 $\langle 220 \rangle$

<223> Synthetic oligonucleotide probe

<400> 237

cagcactgcc aggggaagag gg 22

<210> 238
 <211> 18
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 238
 caggactcgc tacgtccg 18

 <210> 239
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 239
 cagccccttc tcctcctttc tccc 24

 <210> 240
 <211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 240
 gcagttatca gggacgcact cagcc 25

 <210> 241
 <211> 18
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 241
 ccagcgagag gcagatag 18

 <210> 242
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 242
 cggtcaccgt gtcctgcggg atg 23

 <210> 243
 <211> 42
 <212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 243

cagccccttc tcctcctttc tcccacgtcc tatctgcctc tc 42

<210> 244

<211> 1894

<212> DNA

<213> Homo sapiens

<400> 244

ggcggcgtcc gtgaggggct cctttgggca ggggtagtgt ttggtgtccc 50
 tgtcttgctg gatattgaca aactgaagct ttcctgcacc actggactta 100
 aggaagagtg tactcgtagg cggacagctt tagtggccgg cgggccgctc 150
 tcatcccccg taaggagcag agtcctttgt actgaccaag atgagcaaca 200
 tctacatcca ggagcctccc acgaatggga aggttttatt gaaaactaca 250
 gctggagata ttgacataga gttgtggtcc aaagaagctc ctaaagcttg 300
 cagaaatfff atccaactff gtttggaagc ttattatgac aataccatff 350
 ttcatagagt tgtgcctggt ttcatagtcc aaggcggaga tcctactggc 400
 acagggagtg gtggagagtc tatctatgga gcgccattca aagatgaatt 450
 tcattcacgg ttgcgtttta atcggagagg actgggttgc atggcaaattg 500
 ctggttctca tgataatggc agccagtttt tcttcacact gggtcgagca 550
 gatgaactta acaataagca taccatcttt ggaaagggtta caggggatac 600
 agtatataac atgttgcgac tgtcagaagt agacattgat gatgacgaaa 650
 gaccacataa tccacacaaa ataaaaagct gtgagggtttt gtttaatcct 700
 tttgatgaca tcattccaag ggaaattaaa aggctgaaaa aagagaaacc 750
 agaggaggaa gtaaagaaat tgaaacccaa aggcacaaaa aatffffagtt 800
 tactttcatt tggagaggaa gctgaggaag aagaggagga agtaaatcga 850
 gttagtcaga gcatgaaggg caaaagcaaa agtagtcatt acttgcttaa 900
 ggatgatcca catctcagtt ctgttccagt tgtagaaagt gaaaaagggtg 950
 atgcaccaga tttagttgat gatggagaag atgaaagtgc agagcatgat 1000
 gaatatattg atggtgatga aaagaacctg atgagagaaa gaattgccaa 1050
 aaaattaaaa aaggacacaa gtgcgaatgt taaatcagct ggagaaggag 1100

aagtggagaa gaaatcagtc agccgcagtg aagagctcag aaaagaagca 1150
agacaattaa aacgggaact cttagcagca aaacaaaaaa aagtagaaaa 1200
tgcagcaaaa caagcagaaa aaagaagtga agaggaagaa gcccctccag 1250
atggtgctgt tgccgaatac agaagagaaa agcaaaagta tgaagctttg 1300
aggaagcaac agtcaaagaa gggaaacttcc cggaagatc agacccttgc 1350
actgctgaac cagtttaaat ctaaactcac tcaagcaatt gctgaaacac 1400
ctgaaaatga cattcctgaa acagaagtag aagatgatga aggatggatg 1450
tcacatgtac ttcagtttga ggataaaagc agaaaagtga aagatgcaag 1500
catgcaagac tcagatacat ttgaaatcta tgatcctcgg aatccagtga 1550
ataaaagaag gaggaagaa agcaaaaagc tgatgagaga gaaaaaagaa 1600
agaagataaa atgagaataa tgataaccag aacttgctgg aaatgtgcct 1650
acaatggcct tgtaacagcc attgttccca acagcatcac ttaggggtgt 1700
gaaaagaagt atttttgaac ctgttgtctg gttttgaaaa acaattatct 1750
tgttttgcaa attgtggaat gatgtaagca aatgcttttg gttactggta 1800
catgtgtttt ttcctagctg accttttata ttgctaaatc tgaaataaaa 1850
taactttcct tccacaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 1894

<210> 245
<211> 472
<212> PRT
<213> Homo sapiens

<400> 245
Met Ser Asn Ile Tyr Ile Gln Glu Pro Pro Thr Asn Gly Lys Val
1 5 10 15
Leu Leu Lys Thr Thr Ala Gly Asp Ile Asp Ile Glu Leu Trp Ser
20 25 30
Lys Glu Ala Pro Lys Ala Cys Arg Asn Phe Ile Gln Leu Cys Leu
35 40 45
Glu Ala Tyr Tyr Asp Asn Thr Ile Phe His Arg Val Val Pro Gly
50 55 60
Phe Ile Val Gln Gly Gly Asp Pro Thr Gly Thr Gly Ser Gly Gly
65 70 75
Glu Ser Ile Tyr Gly Ala Pro Phe Lys Asp Glu Phe His Ser Arg
80 85 90
Leu Arg Phe Asn Arg Arg Gly Leu Val Ala Met Ala Asn Ala Gly
95 100 105

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ser | His | Asp | Asn | Gly | Ser | Gln | Phe | Phe | Phe | Thr | Leu | Gly | Arg | Ala | |
| | | | | 110 | | | | | | 115 | | | | 120 | |
| Asp | Glu | Leu | Asn | Asn | Lys | His | Thr | Ile | Phe | Gly | Lys | Val | Thr | Gly | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Asp | Thr | Val | Tyr | Asn | Met | Leu | Arg | Leu | Ser | Glu | Val | Asp | Ile | Asp | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Asp | Asp | Glu | Arg | Pro | His | Asn | Pro | His | Lys | Ile | Lys | Ser | Cys | Glu | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Val | Leu | Phe | Asn | Pro | Phe | Asp | Asp | Ile | Ile | Pro | Arg | Glu | Ile | Lys | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Arg | Leu | Lys | Lys | Glu | Lys | Pro | Glu | Glu | Glu | Val | Lys | Lys | Leu | Lys | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Pro | Lys | Gly | Thr | Lys | Asn | Phe | Ser | Leu | Leu | Ser | Phe | Gly | Glu | Glu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ala | Glu | Glu | Glu | Glu | Glu | Glu | Val | Asn | Arg | Val | Ser | Gln | Ser | Met | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Lys | Gly | Lys | Ser | Lys | Ser | Ser | His | Asp | Leu | Leu | Lys | Asp | Asp | Pro | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| His | Leu | Ser | Ser | Val | Pro | Val | Val | Glu | Ser | Glu | Lys | Gly | Asp | Ala | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Pro | Asp | Leu | Val | Asp | Asp | Gly | Glu | Asp | Glu | Ser | Ala | Glu | His | Asp | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Glu | Tyr | Ile | Asp | Gly | Asp | Glu | Lys | Asn | Leu | Met | Arg | Glu | Arg | Ile | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Ala | Lys | Lys | Leu | Lys | Lys | Asp | Thr | Ser | Ala | Asn | Val | Lys | Ser | Ala | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Gly | Glu | Gly | Glu | Val | Glu | Lys | Lys | Ser | Val | Ser | Arg | Ser | Glu | Glu | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Leu | Arg | Lys | Glu | Ala | Arg | Gln | Leu | Lys | Arg | Glu | Leu | Leu | Ala | Ala | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Lys | Gln | Lys | Lys | Val | Glu | Asn | Ala | Ala | Lys | Gln | Ala | Glu | Lys | Arg | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Ser | Glu | Glu | Glu | Glu | Ala | Pro | Pro | Asp | Gly | Ala | Val | Ala | Glu | Tyr | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Arg | Arg | Glu | Lys | Gln | Lys | Tyr | Glu | Ala | Leu | Arg | Lys | Gln | Gln | Ser | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Lys | Lys | Gly | Thr | Ser | Arg | Glu | Asp | Gln | Thr | Leu | Ala | Leu | Leu | Asn | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Gln | Phe | Lys | Ser | Lys | Leu | Thr | Gln | Ala | Ile | Ala | Glu | Thr | Pro | Glu | |

| | | |
|-------------------------------------|-------------------------|-----|
| 395 | 400 | 405 |
| Asn Asp Ile Pro Glu Thr Glu Val Glu | Asp Asp Glu Gly Trp Met | |
| 410 | 415 | 420 |
| Ser His Val Leu Gln Phe Glu Asp Lys | Ser Arg Lys Val Lys Asp | |
| 425 | 430 | 435 |
| Ala Ser Met Gln Asp Ser Asp Thr Phe | Glu Ile Tyr Asp Pro Arg | |
| 440 | 445 | 450 |
| Asn Pro Val Asn Lys Arg Arg Arg Glu | Glu Ser Lys Lys Leu Met | |
| 455 | 460 | 465 |
| Arg Glu Lys Lys Glu Arg Arg | | |
| 470 | | |

<210> 246
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 246
 tgcggagatc ctactggcac aggg 24

<210> 247
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 247
 cgagttagtc agagcatg 18

<210> 248
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 248
 cagatggtgc tggtgccg 18

<210> 249
 <211> 29
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

ccaagaggcc tcaagtggct accaaatatg gaaccctgca aggaaaacag 450
atgcatgtgg ggaagacacc catccaagtc ttttaggag tccccttctc 500
cagacctcct ctaggtatcc tcaggtttgc acctccagaa cccccggagc 550
cctggaaaagg aatcagagat gctaccacct acccgctgg atggagtctc 600
gctctgtcgc caggctggag tgcagtggca cgatctcggc tactgcaac 650
ctccgcctcc cgggttcaag cgagtctcct gcctcagcct ctgagtgtct 700
ggggctacag gtgcctgcag gagtctctgg gccagctggc ctgatgtac 750
gtcagcacgc gggaacggta caagtggctg cgcttcagcg aggactgtct 800
gtacctgaac gtgtacgcgc cggcgcgcg gcgggggat cccagctgc 850
cagtgatggt ctggttcccg ggaggcgct tcatcgtgg cgctgcttct 900
tcgtacgagg gctctgactt ggccgcccgc gagaaagtgg tgctggtgtt 950
tctgcagcac aggctcggca tcttcggctt cctgagcacg gacgacagcc 1000
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ccctagcctc ggtctcttc catcgggcca tttcccagag tggcaccgcg 1200
ttattcagac ttttcatcac tagtaacca ctgaaagtgg ccaagaagg 1250
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gcctgagggc actatcaggg accaagggtga tgcgtgtgtc caacaagatg 1350
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aaaaaa 2456

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<212> PRT
<213> Homo sapiens

<400> 254
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Gly Thr Gly Thr Ser Ser Asn Pro Ser Val Gly Leu Asn Phe Gly
35 40 45
Asn Leu Gly Ser Thr Ser Thr Pro Ala Thr Thr Ser Ala Pro Ser
50 55 60
Ser Gly Phe Gly Thr Gly Leu Phe Gly Ser Lys Pro Ala Thr Gly
65 70 75
Phe Thr Leu Gly Gly Thr Asn Thr Gly Ala Leu His Thr Lys Arg
80 85 90
Pro Gln Val Val Thr Lys Tyr Gly Thr Leu Gln Gly Lys Gln Met
95 100 105
His Val Gly Lys Thr Pro Ile Gln Val Phe Leu Gly Val Pro Phe
110 115 120
Ser Arg Pro Pro Leu Gly Ile Leu Arg Phe Ala Pro Pro Glu Pro
125 130 135

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Glu | Pro | Trp | Lys | Gly | Ile | Arg | Asp | Ala | Thr | Thr | Tyr | Pro | Pro | 140 | 145 | 150 |
| Gly | Trp | Ser | Leu | Ala | Leu | Ser | Pro | Gly | Trp | Ser | Ala | Val | Ala | Arg | 155 | 160 | 165 |
| Ser | Arg | Leu | Thr | Ala | Thr | Ser | Ala | Ser | Arg | Val | Gln | Ala | Ser | Leu | 170 | 175 | 180 |
| Leu | Pro | Gln | Pro | Leu | Ser | Val | Trp | Gly | Tyr | Arg | Cys | Leu | Gln | Glu | 185 | 190 | 195 |
| Ser | Trp | Gly | Gln | Leu | Ala | Ser | Met | Tyr | Val | Ser | Thr | Arg | Glu | Arg | 200 | 205 | 210 |
| Tyr | Lys | Trp | Leu | Arg | Phe | Ser | Glu | Asp | Cys | Leu | Tyr | Leu | Asn | Val | 215 | 220 | 225 |
| Tyr | Ala | Pro | Ala | Arg | Ala | Pro | Gly | Asp | Pro | Gln | Leu | Pro | Val | Met | 230 | 235 | 240 |
| Val | Trp | Phe | Pro | Gly | Gly | Ala | Phe | Ile | Val | Gly | Ala | Ala | Ser | Ser | 245 | 250 | 255 |
| Tyr | Glu | Gly | Ser | Asp | Leu | Ala | Ala | Arg | Glu | Lys | Val | Val | Leu | Val | 260 | 265 | 270 |
| Phe | Leu | Gln | His | Arg | Leu | Gly | Ile | Phe | Gly | Phe | Leu | Ser | Thr | Asp | 275 | 280 | 285 |
| Asp | Ser | His | Ala | Arg | Gly | Asn | Trp | Gly | Leu | Leu | Asp | Gln | Met | Ala | 290 | 295 | 300 |
| Ala | Leu | Arg | Trp | Val | Gln | Glu | Asn | Ile | Ala | Ala | Phe | Gly | Gly | Asp | 305 | 310 | 315 |
| Pro | Gly | Asn | Val | Thr | Leu | Phe | Gly | Gln | Ser | Ala | Gly | Ala | Met | Ser | 320 | 325 | 330 |
| Ile | Ser | Gly | Leu | Met | Met | Ser | Pro | Leu | Ala | Ser | Gly | Leu | Phe | His | 335 | 340 | 345 |
| Arg | Ala | Ile | Ser | Gln | Ser | Gly | Thr | Ala | Leu | Phe | Arg | Leu | Phe | Ile | 350 | 355 | 360 |
| Thr | Ser | Asn | Pro | Leu | Lys | Val | Ala | Lys | Lys | Val | Ala | His | Leu | Ala | 365 | 370 | 375 |
| Gly | Cys | Asn | His | Asn | Ser | Thr | Gln | Ile | Leu | Val | Asn | Cys | Leu | Arg | 380 | 385 | 390 |
| Ala | Leu | Ser | Gly | Thr | Lys | Val | Met | Arg | Val | Ser | Asn | Lys | Met | Arg | 395 | 400 | 405 |
| Phe | Leu | Gln | Leu | Asn | Phe | Gln | Arg | Asp | Pro | Glu | Glu | Ile | Ile | Trp | 410 | 415 | 420 |
| Ser | Met | Ser | Pro | Val | Val | Asp | Gly | Val | Val | Ile | Pro | Asp | Asp | Pro | | | |

| | | |
|---|-----|-----|
| 425 | 430 | 435 |
| Leu Val Leu Leu Thr Gln Gly Lys Val Ser Ser Val Pro Tyr Leu | | |
| 440 | 445 | 450 |
| Leu Gly Val Asn Asn Leu Glu Phe Asn Trp Leu Leu Pro Tyr Asn | | |
| 455 | 460 | 465 |
| Ile Thr Lys Glu Gln Val Pro Leu Val Val Glu Glu Tyr Leu Asp | | |
| 470 | 475 | 480 |
| Asn Val Asn Glu His Asp Trp Lys Met Leu Arg Asn Arg Met Met | | |
| 485 | 490 | 495 |
| Asp Ile Val Gln Asp Ala Thr Phe Val Tyr Ala Thr Leu Gln Thr | | |
| 500 | 505 | 510 |
| Ala His Tyr His Arg Glu Thr Pro Met Met Gly Ile Cys Pro Ala | | |
| 515 | 520 | 525 |
| Gly His Ala Thr Thr Arg Met Lys Ser Thr Cys Ser Trp Ile Leu | | |
| 530 | 535 | 540 |
| Pro Gln Glu Trp Ala | | |
| 545 | | |

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<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 255

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<210> 256

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 256

ccacctcagg aagccgaaga tgcc 24

<210> 257

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 257

gaacggtaca agtggctgcg cttcagcgag gactgtctgt acctg 45

<210> 258
 <211> 2764
 <212> DNA
 <213> Homo sapiens

<400> 258
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 ggagattctg gatacgagtg caggagtcag tgatggtgcc ggagggcctg 150
 tgcattctctg tgccctgctc tttctcctac ccccgacaag actggacagg 200
 gtctacccca gcttatggct actggttcaa agcagtgact gagacaacca 250
 aggggtgctcc tgtggccaca aaccaccaga gtcgagaggt ggaaatgagc 300
 acccgggggcc gattccagct cactggggat cccgccaagg ggaactgctc 350
 cttggtgatc agagacgcgc agatgcagga tgagtcacag tacttctttc 400
 ggggtggagag aggaagctat gtgacatata atttcatgaa cgatgggttc 450
 tttctaaaag taacagtgtc cagcttcacg cccagacccc aggaccacaa 500
 caccgacctc acctgccatg tggacttctc cagaaagggg gtgagcgcac 550
 agaggaccgt ccgactccgt gtggcctatg ccccagaga ccttgttatc 600
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 ctgctgacag ccagccccct gccacactga gctgggtcct gcagaacaga 750
 gtctctctct cgtcccatcc ctggggccct agacccttg ggctggagct 800
 gcccggggtg aaggctgggg attcagggcg ctacacctgc cgagcggaga 850
 acaggcttgg ctcccagcag cgagccctgg acctctctgt gcagtatcct 900
 ccagagaacc tgagagtgat ggtttcccaa gcaaacagga cagtcctgga 950
 aaaccttggg aacggcacgt ctctcccagt actggagggc caaagcctgt 1000
 gcctggtctg tgtcacacac agcagcccc cagccaggct gagctggacc 1050
 cagaggggac aggttctgag cccctcccag ccctcagacc ccgggggtcct 1100
 ggagctgcct cgggttcaag tggagcacga aggagagttc acctgccacg 1150
 ctcggcaccc actgggctcc cagcaogtct ctctcagcct ctccgtgcac 1200
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 aatcggcatc acggctcttc ttttctctg cctggccctg atcatcatga 1300

| | | | | | |
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| agattctacc | gaagagacgg | actcagacag | aaacccccgag | gcccagggttc | 1350 |
| tcccggcaca | gcacgatacct | ggattacatc | aatgtggtcc | cgacgggctgg | 1400 |
| ccccctggct | cagaagcgga | atcagaaaagc | cacaccaaac | agtcctcggga | 1450 |
| cccctcctcc | accaggtgct | ccctccccag | aatcaaagaa | gaaccagaaa | 1500 |
| aagcagtatc | agttgcccgag | tttcccagaa | cccaaatoat | ccactcaagc | 1550 |
| cccagaatcc | caggagagcc | aagaggagct | ccattatgcc | acgctcaact | 1600 |
| tcccaggcgt | cagacccagg | cctgaggccc | ggatgcccac | gggcacccag | 1650 |
| gcggattatg | cagaagtcaa | gttccaatga | gggtctctta | ggcttttagga | 1700 |
| ctgggacttc | ggctagggag | gaaggtagag | taagagggtg | aagataacag | 1750 |
| agtgc aaaagt | ttccttctct | ccctctctct | ctctctttct | ctctctctct | 1800 |
| ctctttctct | ctcttttaaa | aaaacatctg | gccagggcac | agtggctcac | 1850 |
| gcctgtaatc | ccagcacttt | gggagggttg | ggtgggcaga | tcgcctgagg | 1900 |
| tcgggagttc | gagaccagcc | tggccaactt | ggtgaaaccc | cgtctctact | 1950 |
| aaaaatacaa | aaattagctg | ggcatgggtg | caggcgctg | taatcctacc | 2000 |
| tacttgggaa | gctgaggcag | gagaatcact | tgaacctggg | agacggagggt | 2050 |
| tgcagtgagc | caagatcaca | ccattgcacg | ccagcctggg | caacaaagcg | 2100 |
| agactccatc | tcaaaaaaaaa | aatcctccaa | atgggttggg | tgtctgtaat | 2150 |
| cccagcactt | tgggaggcta | aggtgggttg | attgcttgag | cccaggagtt | 2200 |
| cgagaccagc | ctgggcaaca | tggtgaaacc | ccatctctac | aaaaaataca | 2250 |
| aaacatagct | gggcttggtg | gtgtgtgcct | gtagtcccag | ctgtcagaca | 2300 |
| tttaaaccag | agcaactcca | tctggaatag | gagctgaata | aaatgagggt | 2350 |
| gagacctact | gggctgcatt | ctcagacagt | ggaggcattc | taagtcacag | 2400 |
| gatgagacag | gagggtccgta | caagatacag | gtcataaaga | ctttgctgat | 2450 |
| aaaacagatt | gcagtaaaga | agccaaccaa | atcccaccaa | aaccaagttg | 2500 |
| gccacgagag | tgacctctgg | tcgtcctcac | tgctacactc | ctgacagcac | 2550 |
| catgacagtt | tacaaatgcc | atggcaacat | caggaagtta | cccgatatgt | 2600 |
| cccaaaaggg | ggaggaatga | ataatccacc | ccttgtttag | caaataagca | 2650 |
| agaaataacc | ataaaagtgg | gcaaccagca | gctctaggcg | ctgctcttgt | 2700 |
| ctatggagta | gccattcttt | tgttccttta | ctttcttaat | aaacttgctt | 2750 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Lys | Ala | Gly | Asp | Ser | Gly | Arg | Tyr | Thr | Cys | Arg | Ala | Glu | Asn | Arg | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Leu | Gly | Ser | Gln | Gln | Arg | Ala | Leu | Asp | Leu | Ser | Val | Gln | Tyr | Pro | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Pro | Glu | Asn | Leu | Arg | Val | Met | Val | Ser | Gln | Ala | Asn | Arg | Thr | Val | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Leu | Glu | Asn | Leu | Gly | Asn | Gly | Thr | Ser | Leu | Pro | Val | Leu | Glu | Gly | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Gln | Ser | Leu | Cys | Leu | Val | Cys | Val | Thr | His | Ser | Ser | Pro | Pro | Ala | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Arg | Leu | Ser | Trp | Thr | Gln | Arg | Gly | Gln | Val | Leu | Ser | Pro | Ser | Gln | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Pro | Ser | Asp | Pro | Gly | Val | Leu | Glu | Leu | Pro | Arg | Val | Gln | Val | Glu | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| His | Glu | Gly | Glu | Phe | Thr | Cys | His | Ala | Arg | His | Pro | Leu | Gly | Ser | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Gln | His | Val | Ser | Leu | Ser | Leu | Ser | Val | His | Tyr | Lys | Lys | Gly | Leu | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Ile | Ser | Thr | Ala | Phe | Ser | Asn | Gly | Ala | Phe | Leu | Gly | Ile | Gly | Ile | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Thr | Ala | Leu | Leu | Phe | Leu | Cys | Leu | Ala | Leu | Ile | Ile | Met | Lys | Ile | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Leu | Pro | Lys | Arg | Arg | Thr | Gln | Thr | Glu | Thr | Pro | Arg | Pro | Arg | Phe | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Ser | Arg | His | Ser | Thr | Ile | Leu | Asp | Tyr | Ile | Asn | Val | Val | Pro | Thr | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Ala | Gly | Pro | Leu | Ala | Gln | Lys | Arg | Asn | Gln | Lys | Ala | Thr | Pro | Asn | |
| | | | | 455 | | | | | 460 | | | | | 465 | |
| Ser | Pro | Arg | Thr | Pro | Pro | Pro | Pro | Gly | Ala | Pro | Ser | Pro | Glu | Ser | |
| | | | | 470 | | | | | 475 | | | | | 480 | |
| Lys | Lys | Asn | Gln | Lys | Lys | Gln | Tyr | Gln | Leu | Pro | Ser | Phe | Pro | Glu | |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Pro | Lys | Ser | Ser | Thr | Gln | Ala | Pro | Glu | Ser | Gln | Glu | Ser | Gln | Glu | |
| | | | | 500 | | | | | 505 | | | | | 510 | |
| Glu | Leu | His | Tyr | Ala | Thr | Leu | Asn | Phe | Pro | Gly | Val | Arg | Pro | Arg | |
| | | | | 515 | | | | | 520 | | | | | 525 | |
| Pro | Glu | Ala | Arg | Met | Pro | Lys | Gly | Thr | Gln | Ala | Asp | Tyr | Ala | Glu | |
| | | | | 530 | | | | | 535 | | | | | 540 | |
| Val | Lys | Phe | Gln | | | | | | | | | | | | |

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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

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<210> 261
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 261
 ttctggagcc cagaggggtgc tgag 24

<210> 262
 <211> 45
 <212> DNA
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<220>
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<400> 262
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<210> 263
 <211> 2857
 <212> DNA
 <213> Homo sapiens

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 caacagaaaa ctctcaaaca aagaaagtca agcagccagt gcgatctcat 150
 ttgagagtga agcgtggctg ggtgtggaac caattttttg taccagagga 200
 aatgaatacg actagtcatc acatcggcca gctaagatct gatttagaca 250
 atggaaacaa ttctttccag tacaagcttt tgggagctgg agctggaagt 300
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cataagaata tcttctaaaa tggatagaga actgcaagat gagtattggg 700
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gcagaaatgg attacagcat tgaagaggat gattcgcaaa catttgacat 950
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ttccatatta tgtatttgaa gtttttgaag aaaccccaca gggatcattt 1200
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tcactacaag taactcactg gatogtgaaa tcagtgcttg gtacaaccta 1350
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actgtatgtg caagttotta acatcaatga tcatgctcct gagttctctc 1450
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<211> 772

<212> PRT

<213> Homo sapiens

<400> 264

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asn | Cys | Tyr | Leu | Leu | Leu | Arg | Phe | Met | Leu | Gly | Ile | Pro | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Trp | Pro | Cys | Leu | Gly | Ala | Thr | Glu | Asn | Ser | Gln | Thr | Lys | Lys |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Val | Lys | Gln | Pro | Val | Arg | Ser | His | Leu | Arg | Val | Lys | Arg | Gly | Trp |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Val | Trp | Asn | Gln | Phe | Phe | Val | Pro | Glu | Glu | Met | Asn | Thr | Thr | Ser |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| His | His | Ile | Gly | Gln | Leu | Arg | Ser | Asp | Leu | Asp | Asn | Gly | Asn | Asn | | 65 | 70 | 75 |
| Ser | Phe | Gln | Tyr | Lys | Leu | Leu | Gly | Ala | Gly | Ala | Gly | Ser | Thr | Phe | | 80 | 85 | 90 |
| Ile | Ile | Asp | Glu | Arg | Thr | Gly | Asp | Ile | Tyr | Ala | Ile | Gln | Lys | Leu | | 95 | 100 | 105 |
| Asp | Arg | Glu | Glu | Arg | Ser | Leu | Tyr | Ile | Leu | Arg | Ala | Gln | Val | Ile | | 110 | 115 | 120 |
| Asp | Ile | Ala | Thr | Gly | Arg | Ala | Val | Glu | Pro | Glu | Ser | Glu | Phe | Val | | 125 | 130 | 135 |
| Ile | Lys | Val | Ser | Asp | Ile | Asn | Asp | Asn | Glu | Pro | Lys | Phe | Leu | Asp | | 140 | 145 | 150 |
| Glu | Pro | Tyr | Glu | Ala | Ile | Val | Pro | Glu | Met | Ser | Pro | Glu | Gly | Thr | | 155 | 160 | 165 |
| Leu | Val | Ile | Gln | Val | Thr | Ala | Ser | Asp | Ala | Asp | Asp | Pro | Ser | Ser | | 170 | 175 | 180 |
| Gly | Asn | Asn | Ala | Arg | Leu | Leu | Tyr | Ser | Leu | Leu | Gln | Gly | Gln | Pro | | 185 | 190 | 195 |
| Tyr | Phe | Ser | Val | Glu | Pro | Thr | Thr | Gly | Val | Ile | Arg | Ile | Ser | Ser | | 200 | 205 | 210 |
| Lys | Met | Asp | Arg | Glu | Leu | Gln | Asp | Glu | Tyr | Trp | Val | Ile | Ile | Gln | | 215 | 220 | 225 |
| Ala | Lys | Asp | Met | Ile | Gly | Gln | Pro | Gly | Ala | Leu | Ser | Gly | Thr | Thr | | 230 | 235 | 240 |
| Ser | Val | Leu | Ile | Lys | Leu | Ser | Asp | Val | Asn | Asp | Asn | Lys | Pro | Ile | | 245 | 250 | 255 |
| Phe | Lys | Glu | Ser | Leu | Tyr | Arg | Leu | Thr | Val | Ser | Glu | Ser | Ala | Pro | | 260 | 265 | 270 |
| Thr | Gly | Thr | Ser | Ile | Gly | Thr | Ile | Met | Ala | Tyr | Asp | Asn | Asp | Ile | | 275 | 280 | 285 |
| Gly | Glu | Asn | Ala | Glu | Met | Asp | Tyr | Ser | Ile | Glu | Glu | Asp | Asp | Ser | | 290 | 295 | 300 |
| Gln | Thr | Phe | Asp | Ile | Ile | Thr | Asn | His | Glu | Thr | Gln | Glu | Gly | Ile | | 305 | 310 | 315 |
| Val | Ile | Leu | Lys | Lys | Lys | Val | Asp | Phe | Glu | His | Gln | Asn | His | Tyr | | 320 | 325 | 330 |
| Gly | Ile | Arg | Ala | Lys | Val | Lys | Asn | His | His | Val | Pro | Glu | Gln | Leu | | 335 | 340 | 345 |
| Met | Lys | Tyr | His | Thr | Glu | Ala | Ser | Thr | Thr | Phe | Ile | Lys | Ile | Gln | | | | |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|--|-----|
| | 350 | | 355 | | 360 |
| Val Glu Asp Val | Asp Glu Pro Pro Leu | Phe Leu Leu Pro Tyr Tyr | | | |
| | 365 | 370 | | | 375 |
| Val Phe Glu Val | Phe Glu Glu Thr Pro | Gln Gly Ser Phe Val Gly | | | |
| | 380 | 385 | | | 390 |
| Val Val Ser Ala | Thr Asp Pro Asp Asn | Arg Lys Ser Pro Ile Arg | | | |
| | 395 | 400 | | | 405 |
| Tyr Ser Ile Thr | Arg Ser Lys Val Phe | Asn Ile Asn Asp Asn Gly | | | |
| | 410 | 415 | | | 420 |
| Thr Ile Thr Thr | Ser Asn Ser Leu Asp | Arg Glu Ile Ser Ala Trp | | | |
| | 425 | 430 | | | 435 |
| Tyr Asn Leu Ser | Ile Thr Ala Thr Glu | Lys Tyr Asn Ile Glu Gln | | | |
| | 440 | 445 | | | 450 |
| Ile Ser Ser Ile | Pro Leu Tyr Val Gln | Val Leu Asn Ile Asn Asp | | | |
| | 455 | 460 | | | 465 |
| His Ala Pro Glu | Phe Ser Gln Tyr Tyr | Glu Thr Tyr Val Cys Glu | | | |
| | 470 | 475 | | | 480 |
| Asn Ala Gly Ser | Gly Gln Val Ile Gln | Thr Ile Ser Ala Val Asp | | | |
| | 485 | 490 | | | 495 |
| Arg Asp Glu Ser | Ile Glu Glu His His | Phe Tyr Phe Asn Leu Ser | | | |
| | 500 | 505 | | | 510 |
| Val Glu Asp Thr | Asn Asn Ser Ser Phe | Thr Ile Ile Asp Asn Gln | | | |
| | 515 | 520 | | | 525 |
| Asp Asn Thr Ala | Val Ile Leu Thr Asn | Arg Thr Gly Phe Asn Leu | | | |
| | 530 | 535 | | | 540 |
| Gln Glu Glu Pro | Val Phe Tyr Ile Ser | Ile Leu Ile Ala Asp Asn | | | |
| | 545 | 550 | | | 555 |
| Gly Ile Pro Ser | Leu Thr Ser Thr Asn | Thr Leu Thr Ile His Val | | | |
| | 560 | 565 | | | 570 |
| Cys Asp Cys Gly | Asp Ser Gly Ser Thr | Gln Thr Cys Gln Tyr Gln | | | |
| | 575 | 580 | | | 585 |
| Glu Leu Val Leu | Ser Met Gly Phe Lys | Thr Glu Val Ile Ile Ala | | | |
| | 590 | 595 | | | 600 |
| Ile Leu Ile Cys | Ile Met Ile Ile Phe | Gly Phe Ile Phe Leu Thr | | | |
| | 605 | 610 | | | 615 |
| Leu Gly Leu Lys | Gln Arg Arg Lys Gln | Ile Leu Phe Pro Glu Lys | | | |
| | 620 | 625 | | | 630 |
| Ser Glu Asp Phe | Arg Glu Asn Ile Phe | Gln Tyr Asp Asp Glu Gly | | | |
| | 635 | 640 | | | 645 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gly | Gly | Glu | Glu | Asp | Thr | Glu | Ala | Phe | Asp | Ile | Ala | Glu | Leu | Arg | |
| | | | | 650 | | | | | 655 | | | | | 660 | |
| Ser | Ser | Thr | Ile | Met | Arg | Glu | Arg | Lys | Thr | Arg | Lys | Thr | Thr | Ser | |
| | | | | 665 | | | | | 670 | | | | | 675 | |
| Ala | Glu | Ile | Arg | Ser | Leu | Tyr | Arg | Gln | Ser | Leu | Gln | Val | Gly | Pro | |
| | | | | 680 | | | | | 685 | | | | | 690 | |
| Asp | Ser | Ala | Ile | Phe | Arg | Lys | Phe | Ile | Leu | Glu | Lys | Leu | Glu | Glu | |
| | | | | 695 | | | | | 700 | | | | | 705 | |
| Ala | Asn | Thr | Asp | Pro | Cys | Ala | Pro | Pro | Phe | Asp | Ser | Leu | Gln | Thr | |
| | | | | 710 | | | | | 715 | | | | | 720 | |
| Tyr | Ala | Phe | Glu | Gly | Thr | Gly | Ser | Leu | Ala | Gly | Ser | Leu | Ser | Ser | |
| | | | | 725 | | | | | 730 | | | | | 735 | |
| Leu | Glu | Ser | Ala | Val | Ser | Asp | Gln | Asp | Glu | Ser | Tyr | Asp | Tyr | Leu | |
| | | | | 740 | | | | | 745 | | | | | 750 | |
| Asn | Glu | Leu | Gly | Pro | Arg | Phe | Lys | Arg | Leu | Ala | Cys | Met | Phe | Gly | |
| | | | | 755 | | | | | 760 | | | | | 765 | |
| Ser | Ala | Val | Gln | Ser | Asn | Asn | | | | | | | | | |
| | | | | 770 | | | | | | | | | | | |

<210> 265
 <211> 349
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 24, 60, 141, 226, 228, 249, 252
 <223> unknown base

<400> 265
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 gaatatatttn taaaatggat agagaactgc aagatgagta ttgggtaatc 100
 attcaagcca aggacatgat tggtcagcca ggagcgttgt ntggaacaac 150
 aagtgtatta attaaacttt cagatgttaa tgacaataag cctatatatta 200
 aagaaagttt ataccgcttg actgtntntg aatctgcacc cactgggant 250
 tntataggaa caatcatggc atatgataat gacataggag agaatgcaga 300
 aatggattac agcattgaag aggatgattc gcaaacattt gacattatt 349

<210> 266
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>

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tatttgctca gctggctgag aactgaaga agtcactgaa caaacctac 2150
acacgtacct tcatgtgatt cactgccttc ctctctctac cagtctattt 2200
ccactgaaca aaacctacac acataccttc atgtggttca gtgccttcct 2250
ctctctacca gtctatttcc actgaacaaa acctacgcac ataccttcat 2300
gtggctcagt gccttcctct ctctaccagt ctatttccat tctttcagct 2350
gtgtctgaca tgtttgtgct ctgttcatt ttaacaactg ctcttacttt 2400
tccagtctgt acagaatgct atttcacttg agcaagatga tgtaatggaa 2450
aggggtgttg cactgggtgc tggagacctg gatttgagtc ttgggtgctat 2500
caatcacctgt ctgtgtttga gcaaggcatt tggctgctgt aagcttattg 2550
cttcatctgt aagcgggtgt ttgtaattcc tgatcttccc acctcacagt 2600
gatgttggtg ggatccagt agatagaata catgtaagtg tggttttgta 2650
atttaaaaag tgctatacta agggaaagaa ttgaggaatt aactgcatac 2700
gttttggtgt tgcttttcaa atgtttgaaa ataaaaaaaa tgттаag 2747

<210> 270

<211> 211

<212> PRT

<213> Homo sapiens

<400> 270

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Asn | Ala | Gly | Leu | Gln | Leu | Leu | Gly | Phe | Ile | Leu | Ala | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Gly | Trp | Ile | Gly | Ala | Ile | Val | Ser | Thr | Ala | Leu | Pro | Gln | Trp |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Arg | Ile | Tyr | Ser | Tyr | Ala | Gly | Asp | Asn | Ile | Val | Thr | Ala | Gln | Ala |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Met | Tyr | Glu | Gly | Leu | Trp | Met | Ser | Cys | Val | Ser | Gln | Ser | Thr | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Gln | Ile | Gln | Cys | Lys | Val | Phe | Asp | Ser | Leu | Leu | Asn | Leu | Ser | Ser |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Thr | Leu | Gln | Ala | Thr | Arg | Ala | Leu | Met | Val | Val | Gly | Ile | Leu | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gly | Val | Ile | Ala | Ile | Phe | Val | Ala | Thr | Val | Gly | Met | Lys | Cys | Met |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Lys | Cys | Leu | Glu | Asp | Asp | Glu | Val | Gln | Lys | Met | Arg | Met | Ala | Val |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | |
|-----------------|---------------------|-------------------------|
| Ile Gly Gly Ala | Ile Phe Leu Leu Ala | Gly Leu Ala Ile Leu Val |
| 125 | 130 | 135 |
| Ala Thr Ala Trp | Tyr Gly Asn Arg Ile | Val Gln Glu Phe Tyr Asp |
| 140 | 145 | 150 |
| Pro Met Thr Pro | Val Asn Ala Arg Tyr | Glu Phe Gly Gln Ala Leu |
| 155 | 160 | 165 |
| Phe Thr Gly Trp | Ala Ala Ala Ser Leu | Cys Leu Leu Gly Gly Ala |
| 170 | 175 | 180 |
| Leu Leu Cys Cys | Ser Cys Pro Arg Lys | Thr Thr Ser Tyr Pro Thr |
| 185 | 190 | 195 |
| Pro Arg Pro Tyr | Pro Lys Pro Ala Pro | Ser Ser Gly Lys Asp Tyr |
| 200 | 205 | 210 |

Val

<210> 271
 <211> 564
 <212> DNA
 <213> Homo sapiens
 <220>
 <221> unsure
 <222> 21, 69, 163, 434, 436, 444
 <223> unknown base

<400> 271
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 ggatggatcg ggcgcacatnt cacactgccc ttccccagtg gaggatttta 100
 ctccctatgc tggcgacaac atcgtgaccg cccagcccat gtacgagggg 150
 ctgtggatgt ccngcgtgtc gcagagcacc gggcagatcc agtgcaaagt 200
 ctttgactcc ttgctgaatc tgagcagcac attgcaagca acccgtgcct 250
 tgatgggtgtg tggcatcctc ctgggagtga tagcaatctt tgtggccacc 300
 gttggcatga agtgtatgaa gtgcttgga gacgatgagg tgcagaagat 350
 gaggatggct gtcattgggg gcgcgatatt tcttcttgca ggtctggcta 400
 ttttagttgc cacagcatgg tatggcaata gaancnttca acantttctat 450
 gaccctatga cccagtgcaa tgccaggtac gaatttggtc aggctctctt 500
 cactggctgg gctgctgctt ctctctgcct tctgggaggt gccctacttt 550
 gctgttcctg tccc 564

<210> 272
 <211> 498

cccagtcagt gccaggtacg aatttgggtca ggctctcttc actgggtggg 500
 ctgctgcttc tctctgcctt ctgggaggtg cctactttg ctgttctgc 550
 ga 552

<210> 274
 <211> 526
 <212> DNA
 <213> Homo sapiens
 <220>
 <221> unsure
 <222> 25, 50, 60, 123, 127, 370, 395, 397-398, 402-403, 405-407
 <223> unknown base

<400> 274
 attctccct cctggatgga tcgcncacc gtcacattgc cttccccan 50
 tggaggattn actcctatgc tggcgacaac atcgtgacc cccaggccat 100
 ttaccgaggg gctttggatg tcntgcntgt cgcagagcac cgggcagatc 150
 ccagtgcaaa gtctttgact ccttgctgaa tctgagcagc acattgcaag 200
 caaccgtgc cttgatggg ttggcatcct cctgggagtg atagcaacct 250
 ttgtggccac cgttggcatg aagtgtatga agtgcttggga agacgatgag 300
 gtgccagaag atgaggatgg ctgtcattgg gggcgcgata tttcttggtg 350
 caggtctggc tatttttagtn gccacagcat ggtatggcaa tagantnntt 400
 cnnngnnntct atgaccctat gacccagtc aatgccaggt acgaatttg 450
 tcaggctctc ttcactggct gggctgctgc ttctctctgc cttctgggag 500
 gtgcctact ttgctgttcc tgtccc 526

<210> 275
 <211> 398
 <212> DNA
 <213> Homo sapiens
 <220>
 <221> unsure
 <222> 22, 61, 91, 144, 238-239, 262, 265-266, 271, 274
 <223> unknown base

<400> 275
 agagcaccgg cagatcccag tncaaagtct ttgacccttg ctgaatctga 50
 gcagcacatt ncaagcaacc ccttgcccttg aaggtggttg ncatcccccc 100
 tgggagtgaa tagcaatctt tgtggccacc gttggcatga agtntatgaa 150
 gtgcttgga gacgatgagg tgcagaagat gaggatggct gtcattgggg 200

gcgcgatatt tcttcttgca ggtctggcta ttttagtnnc cacagcatgg 250
 tatggcaata gnatnnttcg nggnttctat gaccctatga cccagtc aa 300
 tgccaggtac gaatttggtc aggctctctt cactggctgg gctgctgctt 350
 ctctctgcct tctgggaggt gccctacttt gctgttcctg tccccgaa 398

<210> 276
 <211> 495
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 39, 58, 130, 234, 314, 364, 427, 450, 461, 476
 <223> unknown base

<400> 276
 agcaatgccc tgccccaggt ggaggattaa ttcctatgnt ggggacaaca 50
 ttgtgacngc ccaggccatg tacggggggc tgtggatgtc ctgcgtgtcg 100
 cagagcaccg ggcagatoca gtgcaaagtn tttgactcct tgctgaattt 150
 gagcagcaca ttgcaagcaa cccgtgcctt gatggtgggtt ggcattcttc 200
 tgggagtgat agcaatcttt gtggccaccg tggnaatgaa gtgtatgaag 250
 tgcttggaag acgatgaggt gcagaagatg aggatggctg tcattggggg 300
 cgcgatattt ctntttgcag gtctggctat tttagttgcc acagcatggg 350
 atggcaatag aatngttcaa gaattttatg accctatgac cccagtc aa 400
 gccaggtacg aatttggta ggctttnttc actggctggg ctgctgcttn 450
 tttctgcctt ntgggaggtg cccantttg ctgttcctgc gaacc 495

<210> 277
 <211> 200
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 34, 87, 138, 147, 163, 165-166, 172
 <223> unknown base

<400> 277
 tcataggggg gcgcgatatt ttttcttgca ggtntgggta ttttagttgc 50
 cacagcatgg tatggcaata gaatcgttca agaattntat gaccctatga 100
 cccagtc aa tgccaggtac gaatttggtc aggctctntt cactggntgg 150
 gctgctgctt ctntnngcct tntgggaggt gccctacttt gctgttcctg 200

<210> 278
<211> 542
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 26, 43, 55, 77, 198, 361-362, 391-392, 396
<223> unknown base

<400> 278
ttcctgggat ggatccgccc ccatcntcac atgccctgcc cnttggagat 50
ttacncctat gctggcgaac aacatcntga ccgcccaggc catgtacgag 100
gggctgtgga atgtcctgcg tgtcccagag caccgggcag atccagtgc 150
aagtctttga ctccttgctg aatctgagca gcacattgca agcaacctg 200
ccttgatggt ggttggcatc ctcctgggag tgatagcaat ctttgtggcc 250
accgttggca tgaagtgta tgaagtgctt ggaagacgat gaggtgcaga 300
agatgaggat ggctgtcatt gggggcgcg tatttcttct tgcaggctg 350
gctatttttag nngccacagc atggtatggc aatcagaccc nntcanaaac 400
tctatgaccc tatgaccca gtcaatgcca ggtacgaatt tggtcaggct 450
ctcttcaactg gctgggctgc tgcttctctc tgccttctgg gaggtgccct 500
actttgctgt tcctgtcccc gaaaaacaac ctcttaccca cg 542

<210> 279
<211> 548
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 90, 115, 147, 228, 387
<223> unknown base

<400> 279
cggggctgca gctgttgggc ttcactctgc ttcctgggat ggaatcggcg 50
ccatcgtcag cactgccctg ccccatggag gatttactcn tatgctggcg 100
acaacatcgt gaccncccag gccatgtacg aggggctgtg gatgtcngcg 150
tgtcgagag caccgggcag atccagtgc aagtctttga ctccttgctg 200
aatctgagca gcacattgca agcaacctg ccttgatggt ggttggcatc 250
ctcctgggag tgatagcaat ctttgtggcc accgttggca tgaagtgtat 300
gaagtgcttg gaagacgatg aggtgcagaa gatgaggatg gctgtcattg 350

ggggcgcgat atttcttctt gcaggtcttg ctatttntag ttgccacagc 400
atggtatggc aatagaatcg ttcaagaatt ctatgaccct atgaccccag 450
tcaatgccag gtacgaattt ggtcaggctc tottcaactgg ctgggctgct 500
gcttctctct gccttctggg aggtgcccta ctttctgtgt cctgcgaa 548

<210> 280

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 280

cgagcgagtc atggccaacg c 21

<210> 281

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 281

gtgtcacacg tagtctttcc cgctgg 26

<210> 282

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 282

ctgcagctgt tgggcttcat tctcgccctc ctgggatgga tcg 43

<210> 283

<211> 2285

<212> DNA

<213> Homo sapiens

<400> 283

gcgtgccgtc agctcgccgg gcaccgcggc ctgcacctcg cctccgccc 50

ctgcgcctgc accgcgtaga ccgaccccc cctccagcgc gccacccgg 100

tagaggaccc ccgcccgtgc cccgaccggt cccgccttt ttgtaaaact 150

taaagcgggc gcagcattaa cgcttcccgc cccggtgacc tctcaggggt 200

ctcccccca aaggtgctcc gccgctaagg aacatggcga aggtggagca 250

ggctctgagc ctcgagccgc agcacgagct caaattccga ggtcccttca 300

ccgatgttgt caccaccaac ctaaagcttg gcaacccgac agaccgaaat 350
gtgtgtttta aggtgaagac tacagcacca cgtaggtact gtgtgaggcc 400
caacagcggga atcatcgatg caggggcctc aattaatgta tctgtgatgt 450
tacagccttt cgattatgat cccaatgaga aaagtaaaca caagtttatg 500
gttcagtcta tgtttgctcc aactgacact tcagatatgg aagcagtatg 550
gaaggaggca aaaccggaag accttatgga ttcaaaactt agatgtgtgt 600
ttgaattgcc agcagagaat gataaaccac atgatgtaga aataaataaa 650
attatatcca caactgcatc aaagacagaa acaccaatag tgtctaagtc 700
tctgagttct tctttggatg acaccgaagt taagaagggt atggaagaat 750
gtaagaggct gcaagggtga gttcagaggc tacgggagga gaacaagcag 800
ttcaaggaag aagatggact gcggatgagg aagacagtgc agagcaacag 850
ccccatttca gcattagccc caactgggaa ggaagaaggc cttagcacc 900
ggctcttggc tctggtggtt ttgttcttta tcgttggtgt aattattggg 950
aagattgcct tgtagaggta gcatgcacag gatggtaa at tggattggtg 1000
gatccaccat atcatgggat ttaaatttat cataaccatg tgtaaaaaga 1050
aattaatgta tgatgacatc tcacaggctc tgcctttaa ttaccctcc 1100
ctgcacacac atacacagat acacacacac aaatataatg taacgatctt 1150
ttagaaagtt aaaaatgtat agtaactgat tgagggggaa aaagaatgat 1200
ctttattaat gacaaggga accatgagta atgccacaat ggcatattgt 1250
aaatgtcatt ttaaacattg gtaggccttg gtacatgatg ctggattacc 1300
tctcttaaaa tgacaccctt cctcgctgtg tgggtgctggc ccttggggag 1350
ctggagccca gcatgctggg gagtgcggtc agctccacac agtagtcccc 1400
acgtggccca ctcccgccc aggtgcttt ccgtgtcttc agttctgtcc 1450
aagccatcag ctcttgga ctgatgaaca gagtcagaag cccaaaggaa 1500
ttgcaactgtg gcagcatcag acgtactcgt cataagttag aggcgtgtgt 1550
tgactgattg acccagcgt ttggaaataa atggcagtgc tttgttcaact 1600
taaagggacc aagctaaatt tgtattggtt catgtagtga agtcaaactg 1650
ttattcagag atgtttaatg catatttaac ttatttaatg tatttcact 1700
catgttttct tattgtcaca agagtacagt taatgctgcg tgctgctgaa 1750

ctctgttggg tgaactggta ttgctgctgg agggctgtgg gtcctctgt 1800
ctctggagag tctggatcatg tggaggtggg gtttattggg atgctggaga 1850
agagctgccca ggaagtgttt tttctgggtc agtaaataac aactgtcata 1900
gggaggggaaa ttctcagtag tgacagtcaa ctctaggtta ccttttttaa 1950
tgaagagtag tcagtcttct agattgttct tataccacct ctcaaccatt 2000
actcacactt ccagcgccca ggtccaagtc tgagcctgac ccccccttgg 2050
ggacctagcc tggagtcagg acaaattgat cgggctgcag agggttagaa 2100
gcgagggcac cagcagttgt ggggtggggag caagggaaga gagaaactct 2150
tcagcgaatc cttctagtag tagttgagag tttgactgtg aattaatttt 2200
atgccataaa agaccaaccc agttctgttt gactatgtag catcttgaaa 2250
agaaaaatta taataaagcc ccaaaattaa gaaaa 2285

<210> 284

<211> 243

<212> PRT

<213> Homo sapiens

<400> 284

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Lys | Val | Glu | Gln | Val | Leu | Ser | Leu | Glu | Pro | Gln | His | Glu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Lys | Phe | Arg | Gly | Pro | Phe | Thr | Asp | Val | Val | Thr | Thr | Asn | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Lys | Leu | Gly | Asn | Pro | Thr | Asp | Arg | Asn | Val | Cys | Phe | Lys | Val | Lys |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Thr | Thr | Ala | Pro | Arg | Arg | Tyr | Cys | Val | Arg | Pro | Asn | Ser | Gly | Ile |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ile | Asp | Ala | Gly | Ala | Ser | Ile | Asn | Val | Ser | Val | Met | Leu | Gln | Pro |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Phe | Asp | Tyr | Asp | Pro | Asn | Glu | Lys | Ser | Lys | His | Lys | Phe | Met | Val |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gln | Ser | Met | Phe | Ala | Pro | Thr | Asp | Thr | Ser | Asp | Met | Glu | Ala | Val |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Trp | Lys | Glu | Ala | Lys | Pro | Glu | Asp | Leu | Met | Asp | Ser | Lys | Leu | Arg |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Cys | Val | Phe | Glu | Leu | Pro | Ala | Glu | Asn | Asp | Lys | Pro | His | Asp | Val |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Glu | Ile | Asn | Lys | Ile | Ile | Ser | Thr | Thr | Ala | Ser | Lys | Thr | Glu | Thr |
| | | | | 140 | | | | | 145 | | | | | 150 |

<223> unknown base

<400> 286

tattgtaaag gccattttaa accattggta ggccttggtg catgatgctg 50
gattacctcc ttaaatgaca ccnttcctcg cctgttggtg ctggccnttg 100
gggagctgga gccccagcat gctggggagt gcggtcagct ccacacagta 150
gtcccccagc ggcccactcc cggcccaggc tgctttccgt gtcttcagtt 200
ctgtccaagc catcagctcc ttgggactga tgaacagagt cagaagccca 250
aaggaattgc cactgtggca gcatcagacg tactcgtcat aagtgaagg 300
cgtgtgttga ctgattgacc cagcgtttg gaaataaatg gcagtgcctt 350
gttcacttaa agggaccaag cttaaattga ttggttcag tagtgaagtc 400
aaactgttat tcagagatgt ttaatgcata ttttaacttat ttaatgtatt 450
tcattctcatg ttttcttatt gtcacaagag tacagttaat gctgcgtgct 500
gctgaactct gttgggtgaa ctggtattgc tgctggaggg ctg 543

<210> 287

<211> 270

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 38, 64, 72, 164, 198, 200, 220, 222, 229, 242

<223> unknown base

<400> 287

ccctggtggt tttgttcttt aattcgttgg tgtaattntt gggaagattg 50
ctttagagg tagnatgcac cnggctggta aattggattg gtggatccac 100
catatccatg ggattttaat ttatcataac catgtgtaaa aagaaattaa 150
tgtatgatga catntcacag gtattgcctt taaattaccc atccctgnan 200
acacatacac agatacacan anacaaatnt aatgtaacga tnttttagaa 250
agttaaaaaat gtatagtaac 270

<210> 288

<211> 428

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 35, 116, 129, 197, 278, 294, 297, 349, 351

<223> unknown base

<400> 288
 ggtggcccat tcccggccca ggctgctttc cggtnnttcag ttctgtccaa 50
 gccatcagct ccttgggact gatgaacaga gtcagaagcc caaaggaatt 100
 gcactgtggc agcatnagac gtacttgtna taagtgagag gcgtgtgttg 150
 actgattgac ccagcgcttt ggaaataaat ggcagtgcct tgttcantta 200
 aaggggacca gctaaatttg tattggttca tgtagtgaag tcaaactggt 250
 attcagagat gtttaatgca tatttaantt atttaatgta tttnatntca 300
 tgttttctta ttgtcacaag agtacagtta atgctgcgtg ctgctgaant 350
 ntgttggttg aactgggtatt gctgctggag ggctgtgggc tcctctgtct 400
 ttggagagtc tggatcatgtg gaggtggg 428

<210> 289
 <211> 320
 <212> DNA
 <213> Homo sapiens

<400> 289
 tgctttccgt gtcttcagtt ctgtccaagc catcagctcc ttgggacttg 50
 atgaacagag tcagaagccc aaaggaattg cactgtggca gcatcagacg 100
 tactcgatcat aagtgaagagg cgtgtgttga ctgattgacc cagcgctttg 150
 gaaataaatg gcagtgcctt gttcacttaa agggaccaag ctaaatttgt 200
 attggttcat gtagtgaagt caaactgtta ttcagagatg tttaatgcat 250
 atttaactta tttaatgtat ttcatctcat gttttcttat tgtcacaaga 300
 gtacagttaa tgctgcgtgc 320

<210> 290
 <211> 609
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 57, 60, 186, 235, 244, 304, 339, 355, 359, 361, 387, 432, 441,
 447, 481, 513, 532, 584, 598
 <223> unknown base

<400> 290
 aaacctttta aagttgaggg gaaaagaatg atcctttatt aatgacaagg 50
 gaaaccontgn gtaatgccac aatggcatat tgtaaatgtc attttaaaca 100
 ttggtaggcc ttggtacatg atgctggatt acctctctta aaatgacacc 150
 ctctctogcc tgttggtgct ggcccttggg gagctngagc ccagcatgct 200

ggggagtgcg gtcgtctcca cacagtagtc cccangtggc ccantcccgg 250
 cccaggctgc tttccgtgtc ttcagttctg tccaagccat cagctccttg 300
 ggantgatga acagagtcag aagcccaaag gaattgcant gtggcagcat 350
 cagangtant ngtcataagt gagaggcgtg tgttgantga ttgaccacgc 400
 gctttggaaa taaatggcag tgctttgttc anttaaaggg nccaagntaa 450
 atttgtattg gttcatgtag tgaagtcaaa ntgttattca gagatgttta 500
 atgcatattt aanttattta atgtatttca tntcatgttt tcttattgtc 550
 acaagggtag agttaatgct gcgtgctgct gaantctgtt gggagaantg 600
 gtattgctg 609

<210> 291
 <211> 493
 <212> DNA
 <213> Homo sapiens

<400> 291
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 cacagtagtc cccacgtggc ccaactccgg cccaggctgc tttccgtgtc 100
 ttcagttctg tccaagccat cagctccttg ggactgatga acagagtcag 150
 aagcccaaag gaattgcact gtggcagcat cagacgtact cgtcataagt 200
 gagaggcgtg tgttgactga ttgaccacgc gctttggaaa taaatggcag 250
 tgctttgttc acttaaaggg accaagctaa atttgtattg gttcatgtag 300
 tgaagtcaaa ctgttattca gagatgttta atgcatattt aacttattta 350
 atgtatttca tctcatgttt tcttattgtc acaagagtag agttaatgct 400
 gcgtgctgct gaactctgtt gggagaactg gtattgctgc tggagggctg 450
 tgggctcttc tgtctctgga gactctggc atgtggaggt ggg 493

<210> 292
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 292
 gcaccaccgt aggtacttgt gtgaggc 27

<210> 293
 <211> 23
 <212> DNA

aataaaagtg gaggcaagaa acgtcgaggt tctaagagga gcaggagaga 900
agctagtggg ggtgaccaa gagagggtac cagagagcat ctgcaggaga 950
gagcgaaggg tgggagaaga agaaaaaat ctggccgggg tcaggaggatt 1000
gccgaaggga ggccttcctt tcagtggacc cgggtcaaga ataccacat 1050
tccgaagggc tgggcacgag gaggcattggg ggacgctacc ttggactatg 1100
actatgctct tctggagctg aagcgtgctc aaaaaagaa atacatggaa 1150
cttggaatca gcccaacgat caagaaaatg cctggtggaa tgatccactt 1200
ctcaggatth gataacgata gggctgatca gttggtctat cggttttgca 1250
gtgtgtccga cgaatccaat gatctccttt accaatactg cgatgctgag 1300
tcgggctoca ccggttcggg ggtctatctg cgtctgaaag atccagacaa 1350
aaagaattgg aagcgcaaaa tcattgcggg ctactcaggg caccagtggg 1400
tggatgtoca cggggttcag aaggactaca acgttgctgt tcgcatcact 1450
cccataaat acgccagat ttgcctctgg attcacggga acgatgccaa 1500
ttgtgcttac ggctaacaga gacctgaaac agggcgggtg atcatctaaa 1550
tcacagagaa aaccagctct gcttacgta gtgagatcac ttcatagggt 1600
atgctggac ttgaactctg tcaatagcat ttcaacattt ttcaaatca 1650
ggagattttc gtccatttaa aaaatgtata ggtgcagata ttgaaactag 1700
gtgggcactt caatgccaa tatatactct tctttacatg gtgatgagtt 1750
tcatttgtag aaaaattttg ttgccttctt aaaaattaga cacactttaa 1800
accttcaaac aggtattata aataacatgt gactccttaa tggacttatt 1850
ctcagggtcc tactctaaga agaactaat aggatgctgg ttgtgtatta 1900
aatgtgaaat tgcatagata aaggtagatg gtaaagcaat tagtatcaga 1950
atagagacag aaagttacaa cacagtttgt actactctga gatggatoca 2000
ttcagctcat gccctcaatg tttatattgt gttatctggt gggctcggga 2050
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attataaaca aaactaataa ctgttttact gctttaagaa ataacaatta 2150
caatgtgtat tatttaaaaa tgggagaaat agtttgttct atgaaataaa 2200
cctagtttag aaataggga gctgagacat ttttaagatct caagttttta 2250
tttaactaat actcaaaata tggacttttc atgtatgcat aggggaagaca 2300

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cttcacaaat tatgaatgat catgtgttga aagccacatt attttatgct 2350
atacattcta tgtatgaggt gctacatttt taggacaaag aattctgtaa 2400
tctttttcaa gaaagagtct ttttctcctt gacaaaaatcc agcttttgta 2450
tgaggactat aggggtgaatt ctctgattag taattttaga tatgtccttt 2500
cctaaaaatg aataaaattt atgaatatga 2530
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<210> 296
<211> 413
<212> PRT
<213> Homo sapiens
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| <400> 296 | | | | | | | | | | | | | | |
| Met | Glu | Asn | Met | Leu | Leu | Trp | Leu | Ile | Phe | Phe | Thr | Pro | Gly | Trp |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Thr | Leu | Ile | Asp | Gly | Ser | Glu | Met | Glu | Trp | Asp | Phe | Met | Trp | His |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Arg | Lys | Val | Pro | Arg | Ile | Val | Ser | Glu | Arg | Thr | Phe | His | Leu |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Thr | Ser | Pro | Ala | Phe | Glu | Ala | Asp | Ala | Lys | Met | Met | Val | Asn | Thr |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Val | Cys | Gly | Ile | Glu | Cys | Gln | Lys | Glu | Leu | Pro | Thr | Pro | Ser | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Glu | Leu | Glu | Asp | Tyr | Leu | Ser | Tyr | Glu | Thr | Val | Phe | Glu | Asn |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gly | Thr | Arg | Thr | Leu | Thr | Arg | Val | Lys | Val | Gln | Asp | Leu | Val | Leu |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Glu | Pro | Thr | Gln | Asn | Ile | Thr | Thr | Lys | Gly | Val | Ser | Val | Arg | Arg |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Lys | Arg | Gln | Val | Tyr | Gly | Thr | Asp | Ser | Arg | Phe | Ser | Ile | Leu | Asp |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Lys | Arg | Phe | Leu | Thr | Asn | Phe | Pro | Phe | Ser | Thr | Ala | Val | Lys | Leu |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Ser | Thr | Gly | Cys | Ser | Gly | Ile | Leu | Ile | Ser | Pro | Gln | His | Val | Leu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Thr | Ala | Ala | His | Cys | Val | His | Asp | Gly | Lys | Asp | Tyr | Val | Lys | Gly |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Ser | Lys | Lys | Leu | Arg | Val | Gly | Leu | Leu | Lys | Met | Arg | Asn | Lys | Ser |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Gly | Gly | Lys | Lys | Arg | Arg | Gly | Ser | Lys | Arg | Ser | Arg | Arg | Glu | Ala |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Gly | Asp | Gln | Arg | Glu | Gly | Thr | Arg | Glu | His | Leu | Gln | Glu |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Arg | Ala | Lys | Gly | Gly | Arg | Arg | Arg | Lys | Lys | Ser | Gly | Arg | Gly | Gln |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Arg | Ile | Ala | Glu | Gly | Arg | Pro | Ser | Phe | Gln | Trp | Thr | Arg | Val | Lys |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Asn | Thr | His | Ile | Pro | Lys | Gly | Trp | Ala | Arg | Gly | Gly | Met | Gly | Asp |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Ala | Thr | Leu | Asp | Tyr | Asp | Tyr | Ala | Leu | Leu | Glu | Leu | Lys | Arg | Ala |
| | | | | 275 | | | | | 280 | | | | | 285 |
| His | Lys | Lys | Lys | Tyr | Met | Glu | Leu | Gly | Ile | Ser | Pro | Thr | Ile | Lys |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Lys | Met | Pro | Gly | Gly | Met | Ile | His | Phe | Ser | Gly | Phe | Asp | Asn | Asp |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Arg | Ala | Asp | Gln | Leu | Val | Tyr | Arg | Phe | Cys | Ser | Val | Ser | Asp | Glu |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Ser | Asn | Asp | Leu | Leu | Tyr | Gln | Tyr | Cys | Asp | Ala | Glu | Ser | Gly | Ser |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Thr | Gly | Ser | Gly | Val | Tyr | Leu | Arg | Leu | Lys | Asp | Pro | Asp | Lys | Lys |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Asn | Trp | Lys | Arg | Lys | Ile | Ile | Ala | Val | Tyr | Ser | Gly | His | Gln | Trp |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Val | Asp | Val | His | Gly | Val | Gln | Lys | Asp | Tyr | Asn | Val | Ala | Val | Arg |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Ile | Thr | Pro | Leu | Lys | Tyr | Ala | Gln | Ile | Cys | Leu | Trp | Ile | His | Gly |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Asn | Asp | Ala | Asn | Cys | Ala | Tyr | Gly | | | | | | | |
| | | | | 410 | | | | | | | | | | |

<210> 297
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 297
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<210> 298
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 298
catcgttccc gtgaatccag aggc 24

<210> 299
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 299
gaaggagggc cttcctttca gtggacccgg gtcaagaata cccac 45

<210> 300
<211> 1869
<212> DNA
<213> Homo sapiens

<400> 300
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ccagtactgg atgtgacagc aggcagagga gcacttagca gcttattcag 100
tgtccgattc tgattccggc aaggatccaa gcatggaatg ctgccgtcgg 150
gcaactcctg gcacactgct cctctttctg gctttcctgc tcctgagttc 200
caggaccgca cgctccgagg aggaccggga cggcctatgg gatgcctggg 250
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ctgaggcgct gcctgagcag caagagctgt gaaggaagaa atatccgata 350
cagaacatgc agtaatgtgg actgcccacc agaagcaggt gatttccgag 400
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gaatggcttc ctgtgtctaa tgaccctgac aacctatgtt cactcaagtg 500
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atggtacgag ttgctataca gaatctttgg atatgtgcat cagtggttta 600
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taactgtggg gtctgcaacg gagatgggtc cacctgccgg ctggtccgag 700
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gcacttcctt atggaagtag acatattcgc cttgtcttaa aaggtcctga 800
tcacttatat ctggaaacca aaacctcca ggggactaaa ggtgaaaaca 850
gtctcagctc cacaggaact ttccttgtgg acaattctag tgtggacttc 900

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Leu | Ser | Ser | Lys | Ser | Cys | Glu | Gly | Arg | Asn | Ile | Arg | Tyr | Arg | Thr | | 65 | 70 | 75 |
| Cys | Ser | Asn | Val | Asp | Cys | Pro | Pro | Glu | Ala | Gly | Asp | Phe | Arg | Ala | | 80 | 85 | 90 |
| Gln | Gln | Cys | Ser | Ala | His | Asn | Asp | Val | Lys | His | His | Gly | Gln | Phe | | 95 | 100 | 105 |
| Tyr | Glu | Trp | Leu | Pro | Val | Ser | Asn | Asp | Pro | Asp | Asn | Pro | Cys | Ser | | 110 | 115 | 120 |
| Leu | Lys | Cys | Gln | Ala | Lys | Gly | Thr | Thr | Leu | Val | Val | Glu | Leu | Ala | | 125 | 130 | 135 |
| Pro | Lys | Val | Leu | Asp | Gly | Thr | Arg | Cys | Tyr | Thr | Glu | Ser | Leu | Asp | | 140 | 145 | 150 |
| Met | Cys | Ile | Ser | Gly | Leu | Cys | Gln | Ile | Val | Gly | Cys | Asp | His | Gln | | 155 | 160 | 165 |
| Leu | Gly | Ser | Thr | Val | Lys | Glu | Asp | Asn | Cys | Gly | Val | Cys | Asn | Gly | | 170 | 175 | 180 |
| Asp | Gly | Ser | Thr | Cys | Arg | Leu | Val | Arg | Gly | Gln | Tyr | Lys | Ser | Gln | | 185 | 190 | 195 |
| Leu | Ser | Ala | Thr | Lys | Ser | Asp | Asp | Thr | Val | Val | Ala | Leu | Pro | Tyr | | 200 | 205 | 210 |
| Gly | Ser | Arg | His | Ile | Arg | Leu | Val | Leu | Lys | Gly | Pro | Asp | His | Leu | | 215 | 220 | 225 |
| Tyr | Leu | Glu | Thr | Lys | Thr | Leu | Gln | Gly | Thr | Lys | Gly | Glu | Asn | Ser | | 230 | 235 | 240 |
| Leu | Ser | Ser | Thr | Gly | Thr | Phe | Leu | Val | Asp | Asn | Ser | Ser | Val | Asp | | 245 | 250 | 255 |
| Phe | Gln | Lys | Phe | Pro | Asp | Lys | Glu | Ile | Leu | Arg | Met | Ala | Gly | Pro | | 260 | 265 | 270 |
| Leu | Thr | Ala | Asp | Phe | Ile | Val | Lys | Ile | Arg | Asn | Ser | Gly | Ser | Ala | | 275 | 280 | 285 |
| Asp | Ser | Thr | Val | Gln | Phe | Ile | Phe | Tyr | Gln | Pro | Ile | Ile | His | Arg | | 290 | 295 | 300 |
| Trp | Arg | Glu | Thr | Asp | Phe | Phe | Pro | Cys | Ser | Ala | Thr | Cys | Gly | Gly | | 305 | 310 | 315 |
| Gly | Tyr | Gln | Leu | Thr | Ser | Ala | Glu | Cys | Tyr | Asp | Leu | Arg | Ser | Asn | | 320 | 325 | 330 |
| Arg | Val | Val | Ala | Asp | Gln | Tyr | Cys | His | Tyr | Tyr | Pro | Glu | Asn | Ile | | 335 | 340 | 345 |
| Lys | Pro | Lys | Pro | Lys | Leu | Gln | Glu | Cys | Asn | Leu | Asp | Pro | Cys | Pro | | | | |

| | | |
|-------------------------------------|-------------------------|-----|
| 350 | 355 | 360 |
| Ala Ser Asp Gly Tyr Lys Gln Ile Met | Pro Tyr Asp Leu Tyr His | |
| 365 | 370 | 375 |
| Pro Leu Pro Arg Trp Glu Ala Thr Pro | Trp Thr Ala Cys Ser Ser | |
| 380 | 385 | 390 |
| Ser Cys Gly Gly Gly Ile Gln Ser Arg | Ala Val Ser Cys Val Glu | |
| 395 | 400 | 405 |
| Glu Asp Ile Gln Gly His Val Thr Ser | Val Glu Glu Trp Lys Cys | |
| 410 | 415 | 420 |
| Met Tyr Thr Pro Lys Met Pro Ile Ala | Gln Pro Cys Asn Ile Phe | |
| 425 | 430 | 435 |
| Asp Cys Pro Lys Trp Leu Ala Gln Glu | Trp Ser Pro Cys Thr Val | |
| 440 | 445 | 450 |
| Thr Cys Gly Gln Gly Leu Arg Tyr Arg | Val Val Leu Cys Ile Asp | |
| 455 | 460 | 465 |
| His Arg Gly Met His Thr Gly Gly Cys | Ser Pro Lys Thr Lys Pro | |
| 470 | 475 | 480 |
| His Ile Lys Glu Glu Cys Ile Val Pro | Thr Pro Cys Tyr Lys Pro | |
| 485 | 490 | 495 |
| Lys Glu Lys Leu Pro Val Glu Ala Lys | Leu Pro Trp Phe Lys Gln | |
| 500 | 505 | 510 |
| Ala Gln Glu Leu Glu Glu Gly Ala Ala | Val Ser Glu Glu Pro Ser | |
| 515 | 520 | 525 |

<210> 302
 <211> 1533
 <212> DNA
 <213> Homo sapiens

<400> 302
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 ctgggcgggg cgctgtggct ggcggcccg cggttcgtgg ggcccagggt 150
 ccagcggctg cgagaggcg gggaccccg cctcatgcac ggggaagactg 200
 tgctgatcac cggggcgaac agcggcctgg gccgcgccac ggccgcgag 250
 ctactgcgcc tgggagcgcg ggtgatcatg ggctgccggg accgcgcgcg 300
 cgccgaggag gcggcggtc agctccgccc cgagctccgc caggccgcgg 350
 agtgcgccc agagcctggc gtcagcggg tgggcgagct catagtccgg 400
 gagctggacc tcgcctcgct gcgctcgtg cgcgcttct gccaggaaat 450

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Val | Leu | Ile | Thr | Gly | Ala | Asn | Ser | Gly | Leu | Gly | Arg | Ala | Thr | Ala | | 50 | 55 | 60 |
| Ala | Glu | Leu | Leu | Arg | Leu | Gly | Ala | Arg | Val | Ile | Met | Gly | Cys | Arg | | 65 | 70 | 75 |
| Asp | Arg | Ala | Arg | Ala | Glu | Glu | Ala | Ala | Gly | Gln | Leu | Arg | Arg | Glu | | 80 | 85 | 90 |
| Leu | Arg | Gln | Ala | Ala | Glu | Cys | Gly | Pro | Glu | Pro | Gly | Val | Ser | Gly | | 95 | 100 | 105 |
| Val | Gly | Glu | Leu | Ile | Val | Arg | Glu | Leu | Asp | Leu | Ala | Ser | Leu | Arg | | 110 | 115 | 120 |
| Ser | Val | Arg | Ala | Phe | Cys | Gln | Glu | Met | Leu | Gln | Glu | Glu | Pro | Arg | | 125 | 130 | 135 |
| Leu | Asp | Val | Leu | Ile | Asn | Asn | Ala | Gly | Ile | Phe | Gln | Cys | Pro | Tyr | | 140 | 145 | 150 |
| Met | Lys | Thr | Glu | Asp | Gly | Phe | Glu | Met | Gln | Phe | Gly | Val | Asn | His | | 155 | 160 | 165 |
| Leu | Gly | His | Phe | Leu | Leu | Thr | Asn | Leu | Leu | Leu | Gly | Leu | Leu | Lys | | 170 | 175 | 180 |
| Ser | Ser | Ala | Pro | Ser | Arg | Ile | Val | Val | Val | Ser | Ser | Lys | Leu | Tyr | | 185 | 190 | 195 |
| Lys | Tyr | Gly | Asp | Ile | Asn | Phe | Asp | Asp | Leu | Asn | Ser | Glu | Gln | Ser | | 200 | 205 | 210 |
| Tyr | Asn | Lys | Ser | Phe | Cys | Tyr | Ser | Arg | Ser | Lys | Leu | Ala | Asn | Ile | | 215 | 220 | 225 |
| Leu | Phe | Thr | Arg | Glu | Leu | Ala | Arg | Arg | Leu | Glu | Gly | Thr | Asn | Val | | 230 | 235 | 240 |
| Thr | Val | Asn | Val | Leu | His | Pro | Gly | Ile | Val | Arg | Thr | Asn | Leu | Gly | | 245 | 250 | 255 |
| Arg | His | Ile | His | Ile | Pro | Leu | Leu | Val | Lys | Pro | Leu | Phe | Asn | Leu | | 260 | 265 | 270 |
| Val | Ser | Trp | Ala | Phe | Phe | Lys | Thr | Pro | Val | Glu | Gly | Ala | Gln | Thr | | 275 | 280 | 285 |
| Ser | Ile | Tyr | Leu | Ala | Ser | Ser | Pro | Glu | Val | Glu | Gly | Val | Ser | Gly | | 290 | 295 | 300 |
| Arg | Tyr | Phe | Gly | Asp | Cys | Lys | Glu | Glu | Glu | Leu | Leu | Pro | Lys | Ala | | 305 | 310 | 315 |
| Met | Asp | Glu | Ser | Val | Ala | Arg | Lys | Leu | Trp | Asp | Ile | Ser | Glu | Val | | 320 | 325 | 330 |
| Met | Val | Gly | Leu | Leu | Lys | | | | | | | | | | | | | |

<210> 304
 <211> 521
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 20, 34, 62, 87, 221, 229
 <223> unknown base

<400> 304
 ggggattgta aagaggaagn actgtgccca aagntatgga tgaatctgtt 50
 gcaagaaaat tntgggatat cagtgaagtg atggttngcc tgctaaaata 100
 ggaacaagga gttaaagagc tgtttataaa actgcatatc agttatatct 150
 gtgatcagga atggtgtgga ttgagaactt gttacttgaa gaaaaagaat 200
 tttgatattg gaatagcctg ntaagaggna catgtgggta ttttggagtt 250
 actgaaaaat ttttttggg ataagagaat ttcagcaaag atgttttaaa 300
 tatatatagt aagtataatg aataataagt acaatgaaaa atacaattat 350
 attgtaaaat tataactggg caagcatgga tgacatatta atatttgtca 400
 gaattaagtg actcaaagtg ctatcgagag gtttttcaag tatctttgag 450
 tttcatggcc aaagtgttaa ctagttttac tacaatgttt ggtgtttgtg 500
 tggaaattat ctgcctggct t 521

<210> 305
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 305
 ccaggaaatg ctccaggaag agcc 24

<210> 306
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 306
 gcccatgaca ccaaattgaa gagtgg 26

<210> 307

<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 307
aacgcaggga tcttccagtg cccttacatg aagactgaag atggg 45

<210> 308
<211> 1523
<212> DNA
<213> Homo sapiens

<400> 308
gagaggacga ggtgccgctg cctggagaat cctccgctgc cgtcggctcc 50
cggagcccag ccctttccta acccaaccca acctagccca gtcccagccg 100
ccagcgctg tccctgtcac ggacccagc gttaccatgc atcctgccgt 150
cttcctatcc ttacccgacc tcagatgctc ccttctgctc ctggtaactt 200
gggtttttac tcctgtaaca actgaaataa caagtcttgc tacagagaat 250
atagatgaaa ttttaaacaa tgctgatgtt gcttttagtaa atttttatgc 300
tgactggtgt cgtttcagtc agatgttgca tccaattttt gaggaagctt 350
ccgatgtcat taaggaagaa tttccaaatg aaaatcaagt agtgtttgcc 400
agagttgatt gtgatcagca ctctgacata gccagagat acaggataag 450
caaataccca accctcaaat tgtttcgtaa tgggatgatg atgaagagag 500
aatacagggg tcagcgatca gtgaaagcat tggcagatta catcaggcaa 550
caaaaaagtg accccattca agaaattcgg gacttagcag aaatcaccac 600
tcttgatcgc agcaaaagaa atatcattgg atattttgag caaaaggact 650
cggacaacta tagagttttt gaacgagtag cgaatatttt gcatgatgac 700
tgtgcctttc tttctgcatt tggggatgtt tcaaaacogg aaagatatag 750
tggcgacaac ataatctaca aaccaccagg gcattctgct ccggatatgg 800
tgtacttggg agctatgaca aattttgatg tgacttacia ttggattcaa 850
gataaatgtg ttcctcttgt ccgagaaata acatttgaaa atggagagga 900
attgacagaa gaaggactgc cttttotcat actctttcac atgaaagaag 950
atacagaaag tttagaaata ttccagaatg aagtagctcg gcaattaata 1000
agtgaaaaag gtacaataaa cttttttacat gccgattgtg acaaatttag 1050

acatcctctt ctgcacatac agaaaactcc agcagattgt cctgtaatcg 1100
ctattgacag ctttaggcat atgtatgtgt ttggagactt caaagatgta 1150
ttaattcctg gaaaactcaa gcaattcgta ttgacttac attctggaaa 1200
actgcacaga gaattccatc atggacctga cccaactgat acagccccag 1250
gagagcaagc ccaagatgta gcaagcagtc cacctgagag ctccttccag 1300
aaactagcac ccagtgaata taggtatact ctattgaggg atcgagatga 1350
gctttaaaaa cttgaaaaac agtttgtaag cctttcaaca gcagcatcaa 1400
cctacgtggg ggaaatagta aacctatatt ttcataattc tatgtgtatt 1450
tttattttga ataaacagaa agaaatttaa aaaaaaaaaa aaaaaaaaaa 1500
aaaaaaaaaa aaaaaaaaaa aaa 1523

<210> 309
<211> 406
<212> PRT
<213> Homo sapiens

<400> 309
Met His Pro Ala Val Phe Leu Ser Leu Pro Asp Leu Arg Cys Ser
1 5 10 15
Leu Leu Leu Leu Val Thr Trp Val Phe Thr Pro Val Thr Thr Glu
20 25 30
Ile Thr Ser Leu Ala Thr Glu Asn Ile Asp Glu Ile Leu Asn Asn
35 40 45
Ala Asp Val Ala Leu Val Asn Phe Tyr Ala Asp Trp Cys Arg Phe
50 55 60
Ser Gln Met Leu His Pro Ile Phe Glu Glu Ala Ser Asp Val Ile
65 70 75
Lys Glu Glu Phe Pro Asn Glu Asn Gln Val Val Phe Ala Arg Val
80 85 90
Asp Cys Asp Gln His Ser Asp Ile Ala Gln Arg Tyr Arg Ile Ser
95 100 105
Lys Tyr Pro Thr Leu Lys Leu Phe Arg Asn Gly Met Met Met Lys
110 115 120
Arg Glu Tyr Arg Gly Gln Arg Ser Val Lys Ala Leu Ala Asp Tyr
125 130 135
Ile Arg Gln Gln Lys Ser Asp Pro Ile Gln Glu Ile Arg Asp Leu
140 145 150
Ala Glu Ile Thr Thr Leu Asp Arg Ser Lys Arg Asn Ile Ile Gly
155 160 165

<222> 36, 48
<223> unknown base

<400> 310
attaaggaag aatttccaaa tgaaaatcaa gtagtntttg ccagagtnga 50
ttgtgatcag cactctgaca tagcccagag atacaggata agcaaatacc 100
caaccctcaa attgtttcgt aatgggatga tgatgaagag agaatacagg 150
ggtcagcgat cagtgaaagc attggcagat ta 182

<210> 311
<211> 598
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 38, 59, 140, 169, 174, 183, 282-283, 294-295, 319, 396
<223> unknown base

<400> 311
agaggcctct ctggaagttg tcccgggtgt tcgccgcngg agcccgggtc 50
gagaggacna ggtgccgctg cctggagaat cctccgctgc cgtcggctcc 100
cggagcccag ccctttccta acccaaccca acctagcccn gtcccagccg 150
ccagcgcttg tccctgtcnc gganccagc gtnaccatgc atcctgccgt 200
cttcctatcc ttaccgcacc tcagatgctc cttctgtctc ctggtaactt 250
gggtttttac tcctgtaaca actgaaataa cngtcttga tacnnagaat 300
atagatgaaa ttttaaacna tgctgatgtg gctttagtca atttttatgc 350
tgactggtgt cgtttcagtc agatgtggca tccaattttt gaggangctt 400
ccgatgtcat taaggaagaa tttccaaatg aaaatcaagt agtgtttgcc 450
agagttgatt gtgatcagca ctctgacata gccagagat acaggataag 500
caaataccca accctcaaat tgtttcgtaa tgggatgatg atgaagagag 550
aatacagggg tcagcgatca gtgaaagcat tggcagatta catcaggc 598

<210> 312
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 312
tgagaggcct ctctggaagt tg 22

```

<210> 313
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 313
gtcagcgatc agtgaaagc 19

<210> 314
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 314
ccagaatgaa gtagctcggc 20

<210> 315
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 315
ccgactcaaa atgcattgtc 20

<210> 316
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 316
catttggcag gaattgtcc 19

<210> 317
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 317
ggtgctatag gccaaagg 18

<210> 318
<211> 24
<212> DNA

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<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 318

ctgtatctct gggctatgtc agag 24

<210> 319

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 319

ctacatataa tggcacatgt cagcc 25

<210> 320

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 320

cgtcttcccta tccttaccgc acctcagatg ctcccttctg ctccctg 46

<210> 321

<211> 1333

<212> DNA

<213> Homo sapiens

<400> 321

gcccacgcgt ccgatggcgt tcacgttcgc ggccttctgc tacatgctgg 50

cgctgctgct cactgccgcg ctcatcttct tcgccatttg gcacattata 100

gcatttgatg agctgaagac tgattacaag aatcctatag accagtgtaa 150

tacctgaat ccccttgtac tcccagagta cctcatccac gctttcttct 200

gtgtcatgtt tctttgtgca gcagagtggc ttacactggg totcaatatg 250

cccctcttgg catatcatat ttggaggtat atgagtagac cagtgatgag 300

tggcccagga ctctatgacc ctacaaccat catgaatgca gatattctag 350

catattgtca gaaggaagga tgggtgcaaat tagcttttta tcttctagca 400

tttttttact acctatatgg catgatctat gttttggtga gctottagaa 450

caacacacag aagaattggt ccagttaagt gcatgcaaaa agccaccaa 500

tgaagggatt ctatccagca agatcctgtc caagagtagc ctgtggaatc 550

tgatcagtta ctttaaaaaa tgactcotta ttttttaaata gtttccacat 600
 ttttgcttgt ggaaagactg ttttcatatg ttatactcag ataaagattt 650
 taaatggtat tacgtataaa ttaatatataa atgattacct ctggtgttga 700
 caggtttgaa cttgcacttc ttaaggaaca gccataatcc tctgaatgat 750
 gcattaatta ctgactgtcc tagtacattg gaagcttttg tttataggaa 800
 cttgtagggc tcatttttggc ttcatatgaa cagtatctaa ttataaatta 850
 gctgtagata tcagggtgctt ctgatgaagt gaaaatgtat atctgactag 900
 tgggaaaactt catgggtttc ctcatctgtc atgtcgatga ttatatatgg 950
 atacattttac aaaaataaaaa agcggaatt ttcccttcgc ttgaatatta 1000
 tccctgtata ttgcatgaat gagagatttc ccatatttcc atcagagtaa 1050
 taaatatact tgctttaatt cttaagcata agtaaacaatg atataaaaaat 1100
 atatgctgaa ttacttgtga agaattgcatt taaagctatt ttaaatgtgt 1150
 ttttatttgt aagacattac ttattaagaa attggttatt atgcttactg 1200
 ttctaattctg gtggttaaagg tattcttaag aatttgcagg tactacagat 1250
 tttcaaaaact gaatgagaga aaattgtata accatcctgc tgttccttta 1300
 gtgcaataca ataaaactct gaaattaaga ctc 1333

<210> 322
 <211> 144
 <212> PRT
 <213> Homo sapiens

<400> 322
 Met Ala Phe Thr Phe Ala Ala Phe Cys Tyr Met Leu Ala Leu Leu
 1 5 10 15
 Leu Thr Ala Ala Leu Ile Phe Phe Ala Ile Trp His Ile Ile Ala
 20 25 30
 Phe Asp Glu Leu Lys Thr Asp Tyr Lys Asn Pro Ile Asp Gln Cys
 35 40 45
 Asn Thr Leu Asn Pro Leu Val Leu Pro Glu Tyr Leu Ile His Ala
 50 55 60
 Phe Phe Cys Val Met Phe Leu Cys Ala Ala Glu Trp Leu Thr Leu
 65 70 75
 Gly Leu Asn Met Pro Leu Leu Ala Tyr His Ile Trp Arg Tyr Met
 80 85 90
 Ser Arg Pro Val Met Ser Gly Pro Gly Leu Tyr Asp Pro Thr Thr
 95 100 105

<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 326
gtgcagcaga gtggcttaca 20

<210> 327
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 327
actggaccaa ttcttctgtg 20

<210> 328
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 328
gatattctag catattgtca gaaggaagga tgggtcaaatt tagct 45

<210> 329
<211> 1174
<212> DNA
<213> Homo sapiens

<400> 329
cggacgcgtg ggggaaaccc ttccgagaaa acagcaacaa gctgagctgc 50
tgtgacagag gggaacaaga tggcggcgcc gaaggggagc ctctgggtga 100
ggaccaact ggggctcccg ccgctgctgc tgctgaccat ggccttgcc 150
ggagggttcg ggaccgcttc ggctgaagca tttgactcgg tcttgggtga 200
tacggcgtct tgccaccggg cctgtcagtt gacctacccc ttgcacacct 250
accctaagga agaggagttg tacgcatgtc agagagggtg caggctgttt 300
tcaatttgtc agtttgtgga tgatggaatt gacttaaata gaactaaatt 350
ggaatgtgaa tctgcatgta cagaagcata ttcccaatct gatgagcaat 400
atgcttgcca tcttggttgc cagaatcagc tgccattcgc tgaactgaga 450
caagaacaac ttatgtccct gatgccaaaa atgcacctac tctttcctct 500

aactctggtg aggtcattct ggagtacat gatggactcc gcacagagct 550
tcataacctc ttcattggact ttttatcttc aagccgatga cggaaaaata 600
gttatattcc agtctaagcc agaaatccag tacgcaccac atttggagca 650
ggagcctaca aatttgagag aatcatctct aagcaaaatg tcctatctgc 700
aaatgagaaa ttcacaagcg cacaggaatt ttcttgaaga tggagaaagt 750
gatggctttt taagatgcct ctctcttaac tctgggtgga ttttaactac 800
aactcttgct ctctcgggtga tggattgct ttggatttgt tgtgcaactg 850
ttgctacagc tgtggagcag tatgttcctt ctgagaagct gagtatctat 900
ggtgacttgg agtttatgaa tgaacaaaag ctaaacagat atccagcttc 950
ttctcttggtg gttgttagat ctaaaactga agatcatgaa gaagcagggc 1000
ctctacctac aaaagtgaat cttgctcatt ctgaaattta agcatttttc 1050
ttttaaaaga caagtgaat agacatctaa aattccactc ctcatagagc 1100
ttttaaaatg gtttcattgg atataggcct taagaaatca ctataaaatg 1150
caaataaagt tactcaaatc tgtg 1174

<210> 330
<211> 323
<212> PRT
<213> Homo sapiens

<400> 330
Met Ala Ala Pro Lys Gly Ser Leu Trp Val Arg Thr Gln Leu Gly
1 5 10 15
Leu Pro Pro Leu Leu Leu Leu Thr Met Ala Leu Ala Gly Gly Ser
20 25 30
Gly Thr Ala Ser Ala Glu Ala Phe Asp Ser Val Leu Gly Asp Thr
35 40 45
Ala Ser Cys His Arg Ala Cys Gln Leu Thr Tyr Pro Leu His Thr
50 55 60
Tyr Pro Lys Glu Glu Glu Leu Tyr Ala Cys Gln Arg Gly Cys Arg
65 70 75
Leu Phe Ser Ile Cys Gln Phe Val Asp Asp Gly Ile Asp Leu Asn
80 85 90
Arg Thr Lys Leu Glu Cys Glu Ser Ala Cys Thr Glu Ala Tyr Ser
95 100 105
Gln Ser Asp Glu Gln Tyr Ala Cys His Leu Gly Cys Gln Asn Gln
110 115 120

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Pro | Phe | Ala | Glu | Leu | Arg | Gln | Glu | Gln | Leu | Met | Ser | Leu | Met | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Pro | Lys | Met | His | Leu | Leu | Phe | Pro | Leu | Thr | Leu | Val | Arg | Ser | Phe | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Trp | Ser | Asp | Met | Met | Asp | Ser | Ala | Gln | Ser | Phe | Ile | Thr | Ser | Ser | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Trp | Thr | Phe | Tyr | Leu | Gln | Ala | Asp | Asp | Gly | Lys | Ile | Val | Ile | Phe | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Gln | Ser | Lys | Pro | Glu | Ile | Gln | Tyr | Ala | Pro | His | Leu | Glu | Gln | Glu | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Pro | Thr | Asn | Leu | Arg | Glu | Ser | Ser | Leu | Ser | Lys | Met | Ser | Tyr | Leu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Gln | Met | Arg | Asn | Ser | Gln | Ala | His | Arg | Asn | Phe | Leu | Glu | Asp | Gly | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Glu | Ser | Asp | Gly | Phe | Leu | Arg | Cys | Leu | Ser | Leu | Asn | Ser | Gly | Trp | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Ile | Leu | Thr | Thr | Thr | Leu | Val | Leu | Ser | Val | Met | Val | Leu | Leu | Trp | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Ile | Cys | Cys | Ala | Thr | Val | Ala | Thr | Ala | Val | Glu | Gln | Tyr | Val | Pro | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Ser | Glu | Lys | Leu | Ser | Ile | Tyr | Gly | Asp | Leu | Glu | Phe | Met | Asn | Glu | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Gln | Lys | Leu | Asn | Arg | Tyr | Pro | Ala | Ser | Ser | Leu | Val | Val | Val | Arg | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ser | Lys | Thr | Glu | Asp | His | Glu | Glu | Ala | Gly | Pro | Leu | Pro | Thr | Lys | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Val | Asn | Leu | Ala | His | Ser | Glu | Ile | | | | | | | | |
| | | | | 320 | | | | | | | | | | | |

<210> 331
 <211> 350
 <212> DNA
 <213> Homo sapiens

<400> 331
 ttgggtgata cggcgtcttg ccaccgggcc tgtcagttga cctaccctt 50
 gcacacctac cctaaggaag aggagttgta cgcattgtcag agaggttgca 100
 ggctgttttc aatttgtcag tttgtggatg atggaattga cttaaattcga 150
 actaaattgg aatgtgaatc tgcatgtaca gaagcatatt cccaattctga 200
 tgagcaatat gcttgccatc ttggttgcca gaatcagctg ccattcgctg 250

aactgagaca agaacaactt atgtccctga tgccaaaaat gcacctactc 300
 tttcctctaa ctctggtgag gtcattctgg agtgacatga tggactccgc 350

<210> 332
 <211> 562
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 47
 <223> unknown base

<400> 332
 cacactggcc ggatctttta gaggcctttg accttgacca agggctcngga 50
 aaacagcaac aagctgagct gctgtgacag agggaacaag atggcggcgc 100
 cgaagggagc ctttggggtga ggaccaact ggggctcccg ccgctgctgc 150
 tgctgaccat ggccttggcc ggagggttcgg ggaccgcttc ggctgaagca 200
 tttgactcgg tcttggggtga tacggcgtct tgccaccggg cctgtcagtt 250
 gacctacccc ttgcacacct accctaagga agaggagttg tacgcatgtc 300
 agagaggttg caggctgttt tcaatttgtc agtttgtgga tgatggaatt 350
 gacttaaata gaactaaatt ggaatgtgaa tctgcatgta cagaagcata 400
 ttcccaatct gatgagcaat atgcttgcca tcttggttgc cagaatcagc 450
 tgccattcgc tgaactgaga caagaacaac ttatgtccct gatgccaaaa 500
 atgcacctac tctttcctct aactctggtg aggtcattct ggagtgcacat 550
 gatggactcc gc 562

<210> 333
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 333
 acaagctgag ctgctgtgac ag 22

<210> 334
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 334
tgattctggc aaccaagatg gc 22

<210> 335

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 335

atggccttgg ccggaggttc ggggaccgct tcggctgaag 40

<210> 336

<211> 1885

<212> DNA

<213> Homo sapiens

<400> 336

gcgaggtggc gatcgctgag aggcaggagg gccgaggcgg gcctgggagg 50
cggcccggag gtggggcgcc gctggggccg gcccgcacgg gcttcatctg 100
agggcgcacg gcccgcgacc gagcgtgcgg actggcctcc caagcgtggg 150
gcgacaagct gccggagctg caatggggccg cggctgggga ttcttgtttg 200
gcctcctggg cgccgtgttg ctgctcagct cgggccacgg agaggagcag 250
cccccggaga cagcggcaca gaggtgcttc tgccaggtta gtggttactt 300
ggatgattgt acctgtgatg ttgaaaccat tgatagattt aataactaca 350
ggcttttccc aagactacaa aaacttcttg aaagtgacta ctttaggtat 400
tacaaggtaa acctgaagag gccgtgtcct ttctggaatg acatcagcca 450
gtgtggaaga agggactgtg ctgtcaaacc atgtcaatct gatgaagtgc 500
ctgatggaat taaatctgcg agctacaagt attctgaaga agccaataat 550
ctcattgaag aatgtgaaca agctgaacga cttggagcag tggatgaatc 600
tctgagtgag gaaacacaga aggtgtttct tcagtggacc aagcatgatg 650
attcttcaga taacttctgt gaagctgatg acattcagtc ccctgaagct 700
gaatatgtag atttgcttct taatcctgag cgctacactg gttacaaggg 750
accagatgct tggaaaatat ggaatgtcat ctacgaagaa aactgtttta 800
agccacagac aattaaaaga cttttaaatc ctttggcttc tggatcaaggg 850
acaagtgaag agaacacttt ttacagttgg ctagaaggtc tctgtgtaga 900
aaaaagagca ttctacagac ttatatctgg cctacatgca agcattaatg 950

tgcatttgag tgcaagatat cttttacaag agacctggtt agaaaagaaa 1000
 tggggacaca acattacaga atttcaacag cgatttgatg gaattttgac 1050
 tgaaggagaa ggtccaagaa ggcttaagaa cttgtatttt ctctacttaa 1100
 tagaactaag ggctttatcc aaagtgttac cattcttcga gcgcccagat 1150
 tttcaactct ttactggaaa taaaattcag gatgaggaaa acaaaatggt 1200
 acttctggaa atacttcatg aaatcaagtc atttcctttg catTTTtgatg 1250
 agaattcatt ttttgctggg gataaaaaag aagcacacaa actaaaggag 1300
 gactttogac tgcattttag aaatatttca agaattatgg attgtgttgg 1350
 ttgttttaaa tgtcgtctgt ggggaaagct tcagactcag ggtttgggca 1400
 ctgctctgaa gatcttattt tctgagaaat tgatagcaaa tatgccagaa 1450
 agtggaccta gttatgaatt ccatctaacc agacaagaaa tagtatcatt 1500
 attcaacgca tttggaagaa tttctacaag tgtgaaagaa ttagaaaact 1550
 tcaggaactt gttacagaat attcattaaa gaaaacaagc tgatatgtgc 1600
 ctgtttctgg acaatggagg cgaaagagtg gaatttcatt caaaggcata 1650
 atagcaatga cagtcttaag ccaaacattt tatataaagt tgcttttgta 1700
 aaggagaatt atattgtttt aagtaaacac atttttaaaa attgtgttaa 1750
 gtctatgtat aatactactg tgagtaaaag taatacttta ataatgtggt 1800
 acaaatTTta aagtttaata ttgaataaaa ggaggattat caaattaaaa 1850
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaa 1885

<210> 337

<211> 468

<212> PRT

<213> Homo sapiens

<400> 337

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Arg | Gly | Trp | Gly | Phe | Leu | Phe | Gly | Leu | Leu | Gly | Ala | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Trp | Leu | Leu | Ser | Ser | Gly | His | Gly | Glu | Glu | Gln | Pro | Pro | Glu | Thr |
| | | | 20 | | | | | 25 | | | | | | 30 |
| Ala | Ala | Gln | Arg | Cys | Phe | Cys | Gln | Val | Ser | Gly | Tyr | Leu | Asp | Asp |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Cys | Thr | Cys | Asp | Val | Glu | Thr | Ile | Asp | Arg | Phe | Asn | Asn | Tyr | Arg |
| | | | 50 | | | | | 55 | | | | | | 60 |
| Leu | Phe | Pro | Arg | Leu | Gln | Lys | Leu | Leu | Glu | Ser | Asp | Tyr | Phe | Arg |
| | | | 65 | | | | | 70 | | | | | | 75 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Tyr | Lys | Val | Asn | Leu | Lys | Arg | Pro | Cys | Pro | Phe | Trp | Asn | Asp | 80 | 85 | 90 |
| Ile | Ser | Gln | Cys | Gly | Arg | Arg | Asp | Cys | Ala | Val | Lys | Pro | Cys | Gln | 95 | 100 | 105 |
| Ser | Asp | Glu | Val | Pro | Asp | Gly | Ile | Lys | Ser | Ala | Ser | Tyr | Lys | Tyr | 110 | 115 | 120 |
| Ser | Glu | Glu | Ala | Asn | Asn | Leu | Ile | Glu | Glu | Cys | Glu | Gln | Ala | Glu | 125 | 130 | 135 |
| Arg | Leu | Gly | Ala | Val | Asp | Glu | Ser | Leu | Ser | Glu | Glu | Thr | Gln | Lys | 140 | 145 | 150 |
| Ala | Val | Leu | Gln | Trp | Thr | Lys | His | Asp | Asp | Ser | Ser | Asp | Asn | Phe | 155 | 160 | 165 |
| Cys | Glu | Ala | Asp | Asp | Ile | Gln | Ser | Pro | Glu | Ala | Glu | Tyr | Val | Asp | 170 | 175 | 180 |
| Leu | Leu | Leu | Asn | Pro | Glu | Arg | Tyr | Thr | Gly | Tyr | Lys | Gly | Pro | Asp | 185 | 190 | 195 |
| Ala | Trp | Lys | Ile | Trp | Asn | Val | Ile | Tyr | Glu | Glu | Asn | Cys | Phe | Lys | 200 | 205 | 210 |
| Pro | Gln | Thr | Ile | Lys | Arg | Pro | Leu | Asn | Pro | Leu | Ala | Ser | Gly | Gln | 215 | 220 | 225 |
| Gly | Thr | Ser | Glu | Glu | Asn | Thr | Phe | Tyr | Ser | Trp | Leu | Glu | Gly | Leu | 230 | 235 | 240 |
| Cys | Val | Glu | Lys | Arg | Ala | Phe | Tyr | Arg | Leu | Ile | Ser | Gly | Leu | His | 245 | 250 | 255 |
| Ala | Ser | Ile | Asn | Val | His | Leu | Ser | Ala | Arg | Tyr | Leu | Leu | Gln | Glu | 260 | 265 | 270 |
| Thr | Trp | Leu | Glu | Lys | Lys | Trp | Gly | His | Asn | Ile | Thr | Glu | Phe | Gln | 275 | 280 | 285 |
| Gln | Arg | Phe | Asp | Gly | Ile | Leu | Thr | Glu | Gly | Glu | Gly | Pro | Arg | Arg | 290 | 295 | 300 |
| Leu | Lys | Asn | Leu | Tyr | Phe | Leu | Tyr | Leu | Ile | Glu | Leu | Arg | Ala | Leu | 305 | 310 | 315 |
| Ser | Lys | Val | Leu | Pro | Phe | Phe | Glu | Arg | Pro | Asp | Phe | Gln | Leu | Phe | 320 | 325 | 330 |
| Thr | Gly | Asn | Lys | Ile | Gln | Asp | Glu | Glu | Asn | Lys | Met | Leu | Leu | Leu | 335 | 340 | 345 |
| Glu | Ile | Leu | His | Glu | Ile | Lys | Ser | Phe | Pro | Leu | His | Phe | Asp | Glu | 350 | 355 | 360 |
| Asn | Ser | Phe | Phe | Ala | Gly | Asp | Lys | Lys | Glu | Ala | His | Lys | Leu | Lys | | | |

| | | |
|---|-----|-----|
| 365 | 370 | 375 |
| Glu Asp Phe Arg Leu His Phe Arg Asn Ile Ser Arg Ile Met Asp | | |
| 380 | 385 | 390 |
| Cys Val Gly Cys Phe Lys Cys Arg Leu Trp Gly Lys Leu Gln Thr | | |
| 395 | 400 | 405 |
| Gln Gly Leu Gly Thr Ala Leu Lys Ile Leu Phe Ser Glu Lys Leu | | |
| 410 | 415 | 420 |
| Ile Ala Asn Met Pro Glu Ser Gly Pro Ser Tyr Glu Phe His Leu | | |
| 425 | 430 | 435 |
| Thr Arg Gln Glu Ile Val Ser Leu Phe Asn Ala Phe Gly Arg Ile | | |
| 440 | 445 | 450 |
| Ser Thr Ser Val Lys Glu Leu Glu Asn Phe Arg Asn Leu Leu Gln | | |
| 455 | 460 | 465 |
| Asn Ile His | | |

<210> 338
 <211> 507
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 101, 263, 376, 397, 426
 <223> unknown base

<400> 338
 gctggaaata tggatgtcat ctacgagaaa ctgttttaag ccacagacaa 50
 ttaaaagacc tttaaactct ttggcttctg gtcaaggac aagtgaagag 100
 nacacttttt acagttggct agaaggtctc tgtgtagaaa aaagagcatt 150
 ctacagactt atatctggcc tacatgcaag cattaatgtg catttgagtg 200
 caagatatct ttacaagag acctgggttag aaaagaaatg gggacacaac 250
 attacagaat ttnaacagcg atttgatgga attttgactg aaggagaagg 300
 tccaagaagg cttaagaact tgtattttct ctacttaata gaactaaggg 350
 ctttatccaa agtgttacca ttcttngagc gccagattt tcaactnttt 400
 actggaaata aaattcagga tgaggnaaac aaaatgttac ttttggaat 450
 acttcatgaa atcaagtcatt ttcctttgca ttttgatgag aattcatttt 500
 tttgctg 507

<210> 339
 <211> 20

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 339
 aagctgccgg agctgcaatg 20

 <210> 340
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 340
 ttgcttctta atcctgagcg c 21

 <210> 341
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 341
 aaaggaggac tttcgactgc 20

 <210> 342
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 342
 agagattcat ccactgctcc aagtcg 26

 <210> 343
 <211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 343
 tgtccagaaa caggcacata tcagc 25

 <210> 344
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 344
agacagcggc acagaggtgc ttctgccagg ttagtgggta cttggatgat 50

<210> 345
<211> 1486
<212> DNA
<213> Homo sapiens

<400> 345
cggacgcgtg ggcggacgcg tgggcggacg cgtgggttgg gagggggcag 50
gatgggaggg aaagtgaaga aaacagaaaa ggagagggac agaggccaga 100
ggactttctca tactggacag aaaccgatca ggcatggaac tccccttcgt 150
cactcacctg ttcttgcccc tgggtttcct gacaggtctc tgctccccct 200
ttaacctgga tgaacatcac ccacgcctat tcccagggcc accagaagct 250
gaatttggat acagtgtctt acaacatgtt ggggggtggac agcgatggat 300
gctggtgggc gccccctggg atgggccttc aggcgaccgg aggggggacg 350
tttatcgctg ccctgtaggg gggggccaca atgccccatg tgccaagggc 400
cacttaggtg actaccaact gggaaattca tctcatcctg ctgtgaatat 450
gcacctgggg atgtctctgt tagagacaga tggatgatgg ggattcatgg 500
tgagctaagg agaggggtgg ggcagtgtct ctgaaggtcc ataaaagaaa 550
aaagagaagt gtggttaagg aaaatggtct gtgtggaggg gtcaaggagt 600
taaaaaccct agaaagcaaa aggtaggtaa tgtcaggag tagtcttcat 650
gcctccttca actgggagca tgttctgagg gtgccctccc aagcctggga 700
gtaactattt ccccatccc caggcctgtg cccctctctg gtctcgtgct 750
tgtggcagct ctgtcttcag ttctgggata tgtgcccgtg tggatgcttc 800
attccagcct cagggaagcc tggcaccac tgcccaacgt gagccagagg 850
aaggctgagt acttggttcc cagaaggaga tactgggtgg gaaaaagatg 900
gggcaaagcg gtatgatgcc tggcaaaggg cctgcatggc tctcctcatt 950
gctaccta atgtgcttcaa agctccatg tttcctaaca gattcagact 1000
cctggccagg tgtggtggcc cacacctgta attctagcac tttgggaggc 1050
caagggtggc agatcacttg aggtcaggag ttcaagacca gcctggccaa 1100
catggtgaaa ctccatctct actaaaaaaa aaaaaataca aaaattagct 1150

gggtgcgcta gtgcatgcct gtaatctcat ctactcggga ggctaagaca 1200
 ggagactctc acttcaaccc aggaggtgga ggttgcggtg agccaagatt 1250
 gtgcctctgc actctagcgt gggtgacaga gtaagcgaga ctccatctca 1300
 aaaataataa taataataat tcagactcct tatcaggagt ccatgatctg 1350
 gcctggcaca gtaactcatg cctgtaatcc caacattttg ggaggccaac 1400
 gcaggaggat tgcttgaggt ctggagggtt gagaccagcc tgggcaacat 1450
 agaagacccc catctctaaa taaatgtttt aaaaat 1486

<210> 346
 <211> 124
 <212> PRT
 <213> Homo sapiens

<400> 346
 Met Glu Leu Pro Phe Val Thr His Leu Phe Leu Pro Leu Val Phe
 1 5 10 15
 Leu Thr Gly Leu Cys Ser Pro Phe Asn Leu Asp Glu His His Pro
 20 25 30
 Arg Leu Phe Pro Gly Pro Pro Glu Ala Glu Phe Gly Tyr Ser Val
 35 40 45
 Leu Gln His Val Gly Gly Gly Gln Arg Trp Met Leu Val Gly Ala
 50 55 60
 Pro Trp Asp Gly Pro Ser Gly Asp Arg Arg Gly Asp Val Tyr Arg
 65 70 75
 Cys Pro Val Gly Gly Ala His Asn Ala Pro Cys Ala Lys Gly His
 80 85 90
 Leu Gly Asp Tyr Gln Leu Gly Asn Ser Ser His Pro Ala Val Asn
 95 100 105
 Met His Leu Gly Met Ser Leu Leu Glu Thr Asp Gly Asp Gly Gly
 110 115 120
 Phe Met Val Ser

<210> 347
 <211> 509
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 22
 <223> unknown base

<400> 347

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 ttgccattgg gagggggcag gatgggaggg aaagtgaaga aaacagaaaa 100
 ggagagggac agaggccaga ggacttctca tactggacag aaaccgatca 150
 ggcattggaac tccccttcgt cactcacctg ttcttgcccc tgggtgttct 200
 gacaggtctc tgctccccct ttaacctgga tgaacatcac ccacgcctat 250
 tcccagggcc accagaagct gaatttggat acagtgtctt acaacatggt 300
 gggggtggac agcgatggat gctgggtggc gcccctggg atgggccttc 350
 aggcgaccgg aggggggacg tttatcgctg ccctgtaggg gggggccaca 400
 atgccccatg tgccaagggc cacttaggtg actaccaact gggaaattca 450
 tctcatcctg ctgtgaatat gcacctgggg atgtctctgt tagagacaga 500
 tggatgatg 509

<210> 348
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 348
 agggacagag gccagaggac ttc 23

<210> 349
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 349
 caggtgcata ttcacagcag gatg 24

<210> 350
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 350
 ggaactcccc ttctgctc acctgttctt gcccctgggtg ttcct 45

<210> 351
 <211> 2056
 <212> DNA

<213> Homo sapiens

<400> 351

aaagttacat tttctctgga actctcctag gccactccct gctgatgcaa 50
catctggggtt tgggcagaaa ggaggggtgct tcggagcccg ccctttctga 100
gcttcctggg ccggtcttag aacaattcag gcttcgctgc gactcagacc 150
tcagctccaa catatgcatt ctgaagaaa atggctgaga tggacagaat 200
gctttatttt ggaaagaaac aatgttctag gtcaaactga gtctacaaa 250
tgcagacttt cacaatggtt ctagaagaaa tctggacaag tcttttcatg 300
tggtttttct acgcattgat tccatgtttg ctcacagatg aagtggccat 350
tctgcctgcc cctcagaacc tctctgtact ctcaaccaac atgaagcatc 400
tcttgatgtg gagcccagtg atcgcgcctg gagaaacagt gtactattct 450
gtcgaatacc agggggagta cgagagcctg tacacgagcc acatctggat 500
ccccagcagc tgggtgtcac tcaactgaagg tcttgagtgt gatgtcactg 550
atgacatcac ggccactgtg ccatacaacc ttcgtgtcag ggccacattg 600
ggctcacaga cctcagcctg gagcatcctg aagcatccct ttaatagaaa 650
ctcaaccatc cttacccgac ctgggatgga gatcacaaa gatggcttcc 700
acctggttat tgagctggag gacctggggc ccagtttga gttccttggtg 750
gcctactgga ggagggagcc tggtgccgag gaacatgtca aaatggtgag 800
gagtgggggt attccagtgc acctagaaac catggagcca ggggctgcat 850
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aatcagctgc agaaggagg aggtggatgc ctgtgccacg gctgtgatgt 1150
ctcctgagga actcctcagg gcctggatct cataggtttg cggaagggcc 1200
cagggtgaagc cgagaacctg gtctgcatga catggaaacc atgaggggac 1250
aagttgtgtt tctgttttcc gccacggaca agggatgaga gaagtaggaa 1300
gagcctgttg tctacaagtc tagaagcaac catcagaggc agggtggttt 1350
gtctaacaga aactgactg aggettaggg gatgtgacct ctagactggg 1400

ggctgccact tgctggctga gcaaccctgg gaaaagtac ttcacccctt 1450
 cggtcctaag ttttctcatt tgtaatgggg gaattaccta cacacctgct 1500
 aaacacacac acacagagtc tctctctata tatacacacg tacacataaa 1550
 tacaccagc acttgcaagg ctagagggaa actggtgaca ctctacagtc 1600
 tgactgattc agtgtttctg gagagcagga cataaatgta tgatgagaat 1650
 gatcaaggac tctacacact ggggtggcttg gagagcccac tttcccagaa 1700
 taatccttga gagaaaagga atcatgggag caatggtgtt gagttcactt 1750
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 gtgacctgga ggaaggtcac agccacactg aaaatgggat gtgcatgaac 1850
 acggaggatc catgaactac tgtaaagtgt tgacagtgtg tgcacactgc 1900
 agacagcagg tgaaatgtat gtgtgcaatg cgacgagaat gcagaagtca 1950
 gtaacatgtg catgtttgtt gtgctccttt tttctgttgg taaagtacag 2000
 aattcagcaa ataaaaaggg ccaccctggc caaaagcggg aaaaaaaaaa 2050
 aaaaaa 2056

<210> 352
 <211> 311
 <212> PRT
 <213> Homo sapiens

<400> 352
 Met Gln Thr Phe Thr Met Val Leu Glu Glu Ile Trp Thr Ser Leu
 1 5 10 15
 Phe Met Trp Phe Phe Tyr Ala Leu Ile Pro Cys Leu Leu Thr Asp
 20 25 30
 Glu Val Ala Ile Leu Pro Ala Pro Gln Asn Leu Ser Val Leu Ser
 35 40 45
 Thr Asn Met Lys His Leu Leu Met Trp Ser Pro Val Ile Ala Pro
 50 55 60
 Gly Glu Thr Val Tyr Tyr Ser Val Glu Tyr Gln Gly Glu Tyr Glu
 65 70 75
 Ser Leu Tyr Thr Ser His Ile Trp Ile Pro Ser Ser Trp Cys Ser
 80 85 90
 Leu Thr Glu Gly Pro Glu Cys Asp Val Thr Asp Asp Ile Thr Ala
 95 100 105
 Thr Val Pro Tyr Asn Leu Arg Val Arg Ala Thr Leu Gly Ser Gln
 110 115 120

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Thr | Ser | Ala | Trp | Ser | Ile | Leu | Lys | His | Pro | Phe | Asn | Arg | Asn | Ser | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Thr | Ile | Leu | Thr | Arg | Pro | Gly | Met | Glu | Ile | Thr | Lys | Asp | Gly | Phe | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| His | Leu | Val | Ile | Glu | Leu | Glu | Asp | Leu | Gly | Pro | Gln | Phe | Glu | Phe | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Val | Ala | Tyr | Trp | Arg | Arg | Glu | Pro | Gly | Ala | Glu | Glu | His | Val | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Lys | Met | Val | Arg | Ser | Gly | Gly | Ile | Pro | Val | His | Leu | Glu | Thr | Met | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Glu | Pro | Gly | Ala | Ala | Tyr | Cys | Val | Lys | Ala | Gln | Thr | Phe | Val | Lys | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ala | Ile | Gly | Arg | Tyr | Ser | Ala | Phe | Ser | Gln | Thr | Glu | Cys | Val | Glu | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Val | Gln | Gly | Glu | Ala | Ile | Pro | Leu | Val | Leu | Ala | Leu | Phe | Ala | Phe | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Val | Gly | Phe | Met | Leu | Ile | Leu | Val | Val | Val | Pro | Leu | Phe | Val | Trp | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Lys | Met | Gly | Arg | Leu | Leu | Gln | Tyr | Ser | Cys | Cys | Pro | Val | Val | Val | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Leu | Pro | Asp | Thr | Leu | Lys | Ile | Thr | Asn | Ser | Pro | Gln | Lys | Leu | Ile | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Ser | Cys | Arg | Arg | Glu | Glu | Val | Asp | Ala | Cys | Ala | Thr | Ala | Val | Met | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ser | Pro | Glu | Glu | Leu | Leu | Arg | Ala | Trp | Ile | Ser | | | | | |
| | | | | 305 | | | | | 310 | | | | | | |

<210> 353

<211> 864

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 654, 711, 748, 827

<223> unknown base

<400> 353

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cctttctagc ttcctggccg gctctagaac aattcaggct tcgctgcgac 100

tagacctcag ctccaacata tgcattctga agaaagatgg ctgagatgac 150

agaatgcttt attttggaaa gaaacaatgt tctaggtcaa actgagtcta 200

ccaaatgcag actttcaciaa tggttctaga agaaatctgg acaagtcttt 250
 tcatgtgggtt tttctacgca ttgattccat gtttgctcac agatgaagtg 300
 gccattctgc ctgcccctca gaacctctct gtactctcaa ccaacatgaa 350
 gcatctcttg atgtggagcc cagtgatcgc gcctggagaa acagtgtact 400
 attctgtcga ataccagggg gagtacgaga gcctgtacac gagccacatc 450
 tggatcccca gcagctggtg ctcaactcact gaaggtcctg agtgtgatgt 500
 cactgatgac atcacggcca ctgtgccata caacctttgt gtcagggcca 550
 cattgggctc acagacctca gcctggagca tcctgaagca tccctttaat 600
 agaaactcaa ccataccttac ccgacctggg atggagatca ccaaagatgg 650
 cttncacctg gttattgagc tggaggacct ggggccccag tttgagttcc 700
 ttgtggccta ntggaggagg ggcgaacccc ttgcggcgca aggggttngc 750
 gaaccccttg cggccgctgg ggtatctctc gagaaaagag aggcccaata 800
 tgaccacat actcaatatg gacgaantgc tattgtccac ctgtttgagt 850
 ggcgctgggt tgat 864

<210> 354
 <211> 23
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Synthetic oligonucleotide probe

<400> 354
 aggttcgct gcgactagac ctc 23

<210> 355
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 355
 ccaggtcggg taaggatggt tgag 24

<210> 356
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 356
tttctacgca ttgattccat gtttgctcac agatgaagtg gccattctgc 50

<210> 357

<211> 1670

<212> DNA

<213> Homo sapiens

<400> 357
cccacgcgtc cgcccacgcg tccgagggac aagagagaag agagactgaa 50
acagggagaa gaggcaggag aggaggaggt ggggagagca cgaagctgga 100
ggccgacact gagggagggc gggaggaggt gaagaaggag agaggggaga 150
agaggcagga gctggaaagg agagagggag gaggaggagg agatgcggga 200
tggagacctg gagttaggtg gcttgggaga gcttaatgaa aagagaacgg 250
agaggaggtg tgggttagga accaagaggt agccctgtgg gcagcagaag 300
gctgagagga gtaggaagat caggagctag agggagactg gagggttccg 350
ggaaaagagc agaggaaaga ggaaagacac agagagacgg gagagagaag 400
aagagtgggt ttgaagggcg gatctcagtc cctggctgct ttggcatttg 450
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ggacagggtc ccagaaggag gggacagagg agctgagaga ggggggcagg 550
gcgttgggca ggggtccctc ggaggcctcc tggggatggg ggctgcagct 600
cgtctgagcg cccctcgagc gctggtactc tgggctgcac tgggggcagc 650
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ataatctcca gggaaacttc gtgccagggc ctcccttctg gggcctggtg 750
aatgcagcgt ggagtctgtg tgctgtgggg aagcggcaga gccccgtgga 800
tgtggagctg aagaggggtc tttatgacct ctttctgccc ccattaaggc 850
tcagcactgg aggagagaag ctccggggaa cettgtacaa caccggccga 900
catgtctcct tcctgcctgc accccgacct gtggtcaatg tgtctggagg 950
tcccctcctt tacagccacc gactcagtga actgcggctg ctgtttggag 1000
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gctgaggtgc agctcattca cttcaaccag gaactctacg ggaatttcag 1100
cgctgcctcc cgcgggccca atggcctggc cattctcagc ctctttgtca 1150
acgttgccag tacctctaac ccattcctca gtgcgctcct taaccgagac 1200
accatcactc gcatctccta caagaatgat gcctactttc ttcaagacct 1250

gagcctggag ctctgttcc ctgaatcctt cggcttcac acctatcagg 1300
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tggtgtcccc catggtcgct gagactcccc ttcgaggatt gcaccgcccc 1600
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ttaaagggac agaatactta 1670

<210> 358
<211> 328
<212> PRT
<213> Homo sapiens

<400> 358
Met Gly Ala Ala Ala Arg Leu Ser Ala Pro Arg Ala Leu Val Leu
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Trp Ala Ala Leu Gly Ala Ala Ala His Ile Gly Pro Ala Pro Asp
20 25 30
Pro Glu Asp Trp Trp Ser Tyr Lys Asp Asn Leu Gln Gly Asn Phe
35 40 45
Val Pro Gly Pro Pro Phe Trp Gly Leu Val Asn Ala Ala Trp Ser
50 55 60
Leu Cys Ala Val Gly Lys Arg Gln Ser Pro Val Asp Val Glu Leu
65 70 75
Lys Arg Val Leu Tyr Asp Pro Phe Leu Pro Pro Leu Arg Leu Ser
80 85 90
Thr Gly Gly Glu Lys Leu Arg Gly Thr Leu Tyr Asn Thr Gly Arg
95 100 105
His Val Ser Phe Leu Pro Ala Pro Arg Pro Val Val Asn Val Ser
110 115 120
Gly Gly Pro Leu Leu Tyr Ser His Arg Leu Ser Glu Leu Arg Leu
125 130 135
Leu Phe Gly Ala Arg Asp Gly Ala Gly Ser Glu His Gln Ile Asn
140 145 150
His Gln Gly Phe Ser Ala Glu Val Gln Leu Ile His Phe Asn Gln
155 160 165
Glu Leu Tyr Gly Asn Phe Ser Ala Ala Ser Arg Gly Pro Asn Gly

| | 170 | 175 | 180 |
|---|-----|-----|-----|
| Leu Ala Ile Leu Ser Leu Phe Val Asn Val Ala Ser Thr Ser Asn | 185 | 190 | 195 |
| Pro Phe Leu Ser Arg Leu Leu Asn Arg Asp Thr Ile Thr Arg Ile | 200 | 205 | 210 |
| Ser Tyr Lys Asn Asp Ala Tyr Phe Leu Gln Asp Leu Ser Leu Glu | 215 | 220 | 225 |
| Leu Leu Phe Pro Glu Ser Phe Gly Phe Ile Thr Tyr Gln Gly Ser | 230 | 235 | 240 |
| Leu Ser Thr Pro Pro Cys Ser Glu Thr Val Thr Trp Ile Leu Ile | 245 | 250 | 255 |
| Asp Arg Ala Leu Asn Ile Thr Ser Leu Gln Met His Ser Leu Arg | 260 | 265 | 270 |
| Leu Leu Ser Gln Asn Pro Pro Ser Gln Ile Phe Gln Ser Leu Ser | 275 | 280 | 285 |
| Gly Asn Ser Arg Pro Leu Gln Pro Leu Ala His Arg Ala Leu Arg | 290 | 295 | 300 |
| Gly Asn Arg Asp Pro Arg His Pro Glu Arg Arg Cys Arg Gly Pro | 305 | 310 | 315 |
| Asn Tyr Arg Leu His Val Asp Gly Val Pro His Gly Arg | 320 | 325 | |

<210> 359

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 359

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<210> 360

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 360

gaggctctgg aagatctgag atgg 24

<210> 361

<211> 50

<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 361
gcctctttgt caacgttgcc agtacctcta acccattcct cagtcgcctc 50

<210> 362
<211> 3038
<212> DNA
<213> Homo sapiens

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<210> 363

<211> 500

<212> PRT

<213> Homo sapiens

<400> 363

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Phe Met Ala Arg Ala Ile Pro Ala Met Val Val Pro Asn Ala Thr
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Leu Leu Glu Lys Leu Leu Glu Lys Tyr Met Asp Glu Asp Gly Glu
 35 40 45

Trp Trp Ile Ala Lys Gln Arg Gly Lys Arg Ala Ile Thr Asp Asn
 50 55 60

Asp Met Gln Ser Ile Leu Asp Leu His Asn Lys Leu Arg Ser Gln
 65 70 75

Val Tyr Pro Thr Ala Ser Asn Met Glu Tyr Met Thr Trp Asp Val
 80 85 90

Glu Leu Glu Arg Ser Ala Glu Ser Trp Ala Glu Ser Cys Leu Trp
 95 100 105

Glu His Gly Pro Ala Ser Leu Leu Pro Ser Ile Gly Gln Asn Leu
 110 115 120

Gly Ala His Trp Gly Arg Tyr Arg Pro Pro Thr Phe His Val Gln
 125 130 135

Ser Trp Tyr Asp Glu Val Lys Asp Phe Ser Tyr Pro Tyr Glu His
 140 145 150

Glu Cys Asn Pro Tyr Cys Pro Phe Arg Cys Ser Gly Pro Val Cys
 155 160 165

Thr His Tyr Thr Gln Val Val Trp Ala Thr Ser Asn Arg Ile Gly

| | 170 | | 175 | | 180 |
|-----------------|---------------------|-------------------------|-----|--|-----|
| Cys Ala Ile Asn | Leu Cys His Asn Met | Asn Ile Trp Gly Gln Ile | | | |
| | 185 | 190 | | | 195 |
| Trp Pro Lys Ala | Val Tyr Leu Val Cys | Asn Tyr Ser Pro Lys Gly | | | |
| | 200 | 205 | | | 210 |
| Asn Trp Trp Gly | His Ala Pro Tyr Lys | His Gly Arg Pro Cys Ser | | | |
| | 215 | 220 | | | 225 |
| Ala Cys Pro Pro | Ser Phe Gly Gly Gly | Cys Arg Glu Asn Leu Cys | | | |
| | 230 | 235 | | | 240 |
| Tyr Lys Glu Gly | Ser Asp Arg Tyr Tyr | Pro Pro Arg Glu Glu Glu | | | |
| | 245 | 250 | | | 255 |
| Thr Asn Glu Ile | Glu Arg Gln Gln Ser | Gln Val His Asp Thr His | | | |
| | 260 | 265 | | | 270 |
| Val Arg Thr Arg | Ser Asp Asp Ser Ser | Arg Asn Glu Val Ile Ser | | | |
| | 275 | 280 | | | 285 |
| Ala Gln Gln Met | Ser Gln Ile Val Ser | Cys Glu Val Arg Leu Arg | | | |
| | 290 | 295 | | | 300 |
| Asp Gln Cys Lys | Gly Thr Thr Cys Asn | Arg Tyr Glu Cys Pro Ala | | | |
| | 305 | 310 | | | 315 |
| Gly Cys Leu Asp | Ser Lys Ala Lys Val | Ile Gly Ser Val His Tyr | | | |
| | 320 | 325 | | | 330 |
| Glu Met Gln Ser | Ser Ile Cys Arg Ala | Ala Ile His Tyr Gly Ile | | | |
| | 335 | 340 | | | 345 |
| Ile Asp Asn Asp | Gly Gly Trp Val Asp | Ile Thr Arg Gln Gly Arg | | | |
| | 350 | 355 | | | 360 |
| Lys His Tyr Phe | Ile Lys Ser Asn Arg | Asn Gly Ile Gln Thr Ile | | | |
| | 365 | 370 | | | 375 |
| Gly Lys Tyr Gln | Ser Ala Asn Ser Phe | Thr Val Ser Lys Val Thr | | | |
| | 380 | 385 | | | 390 |
| Val Gln Ala Val | Thr Cys Glu Thr Thr | Val Glu Gln Leu Cys Pro | | | |
| | 395 | 400 | | | 405 |
| Phe His Lys Pro | Ala Ser His Cys Pro | Arg Val Tyr Cys Pro Arg | | | |
| | 410 | 415 | | | 420 |
| Asn Cys Met Gln | Ala Asn Pro His Tyr | Ala Arg Val Ile Gly Thr | | | |
| | 425 | 430 | | | 435 |
| Arg Val Tyr Ser | Asp Leu Ser Ser Ile | Cys Arg Ala Ala Val His | | | |
| | 440 | 445 | | | 450 |
| Ala Gly Val Val | Arg Asn His Gly Gly | Tyr Val Asp Val Met Pro | | | |
| | 455 | 460 | | | 465 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Asp | Lys | Arg | Lys | Thr | Tyr | Ile | Ala | Ser | Phe | Gln | Asn | Gly | Ile |
| | | | | 470 | | | | | 475 | | | | | 480 |
| | | | | | | | | | | | | | | |
| Phe | Ser | Glu | Ser | Leu | Gln | Asn | Pro | Pro | Gly | Gly | Lys | Ala | Phe | Arg |
| | | | | 485 | | | | | 490 | | | | | 495 |
| | | | | | | | | | | | | | | |
| Val | Phe | Ala | Val | Val | | | | | | | | | | |
| | | | | 500 | | | | | | | | | | |

<210> 364

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 364

ggacagaatt tgggagcaca ctgg 24

<210> 365

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 365

ccaagagtat actgtcctcg 20

<210> 366

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 366

agcacagatt ttctctacag ccccc 25

<210> 367

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 367

aaccactcca gcatgtactg ctgc 24

<210> 368

<211> 50

<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

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ccattcaggt gttctggccc tgtatgtaca cattatacac aggtcgtgtg 50

<210> 369
<211> 1685
<212> DNA

<213> Homo sapiens

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<210> 370

<211> 111

<212> PRT

<213> Homo sapiens

<400> 370

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Leu | Leu | Pro | Arg | Arg | Ala | Pro | Pro | Val | Ser | Met | Arg | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Ala | Ala | Ala | Leu | Leu | Leu | Leu | Leu | Leu | Ala | Leu | Tyr | Thr | Ala |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Arg | Val | Asp | Gly | Ser | Lys | Cys | Lys | Cys | Ser | Arg | Lys | Gly | Pro | Lys |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Ile | Arg | Tyr | Ser | Asp | Val | Lys | Lys | Leu | Glu | Met | Lys | Pro | Lys | Tyr |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Pro | His | Cys | Glu | Glu | Lys | Met | Val | Ile | Ile | Thr | Thr | Lys | Ser | Val |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Arg | Tyr | Arg | Gly | Gln | Glu | His | Cys | Leu | His | Pro | Lys | Leu | Gln |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ser | Thr | Lys | Arg | Phe | Ile | Lys | Trp | Tyr | Asn | Ala | Trp | Asn | Glu | Lys |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Arg | Arg | Val | Tyr | Glu | Glu | | | | | | | | | |
| | | | | 110 | | | | | | | | | | |

<210> 371

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

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tctttggctc gggggctggg gcctcctgtg tcagcctgtt gaccctgtcc 850
cactactcag aaggtctctt ccagaaggcc atcattcaga gcggcaccgc 900
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taagagactt tgt 3113

<210> 375

<211> 816

<212> PRT

<213> Homo sapiens

<400> 375

Met Leu Asn Ser Asn Val Leu Leu Trp Leu Thr Ala Leu Ala Ile
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Lys Phe Thr Leu Ile Asp Ser Gln Ala Gln Tyr Pro Val Val Asn
20 25 30

Thr Asn Tyr Gly Lys Ile Arg Gly Leu Arg Thr Pro Leu Pro Asn
35 40 45

Glu Ile Leu Gly Pro Val Glu Gln Tyr Leu Gly Val Pro Tyr Ala

| 50 | | | | | 55 | | | | | 60 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Pro | Pro | Thr | Gly | Glu | Arg | Arg | Phe | Gln | Pro | Pro | Glu | Pro | Pro |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Ser | Trp | Thr | Gly | Ile | Arg | Asn | Thr | Thr | Gln | Phe | Ala | Ala | Val |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Cys | Pro | Gln | His | Leu | Asp | Glu | Arg | Ser | Leu | Leu | His | Asp | Met | Leu |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Pro | Ile | Trp | Phe | Thr | Ala | Asn | Leu | Asp | Thr | Leu | Met | Thr | Tyr | Val |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Gln | Asp | Gln | Asn | Glu | Asp | Cys | Leu | Tyr | Leu | Asn | Ile | Tyr | Val | Pro |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Thr | Glu | Asp | Gly | Ala | Asn | Thr | Lys | Lys | Asn | Ala | Asp | Asp | Ile | Thr |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Ser | Asn | Asp | Arg | Gly | Glu | Asp | Glu | Asp | Ile | His | Asp | Gln | Asn | Ser |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Lys | Lys | Pro | Val | Met | Val | Tyr | Ile | His | Gly | Gly | Ser | Tyr | Met | Glu |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Gly | Thr | Gly | Asn | Met | Ile | Asp | Gly | Ser | Ile | Leu | Ala | Ser | Tyr | Gly |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Asn | Val | Ile | Val | Ile | Thr | Ile | Asn | Tyr | Arg | Leu | Gly | Ile | Leu | Gly |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Phe | Leu | Ser | Thr | Gly | Asp | Gln | Ala | Ala | Lys | Gly | Asn | Tyr | Gly | Leu |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Leu | Asp | Gln | Ile | Gln | Ala | Leu | Arg | Trp | Ile | Glu | Glu | Asn | Val | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ala | Phe | Gly | Gly | Asp | Pro | Lys | Arg | Val | Thr | Ile | Phe | Gly | Ser | Gly |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Ala | Gly | Ala | Ser | Cys | Val | Ser | Leu | Leu | Thr | Leu | Ser | His | Tyr | Ser |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Glu | Gly | Leu | Phe | Gln | Lys | Ala | Ile | Ile | Gln | Ser | Gly | Thr | Ala | Leu |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Ser | Ser | Trp | Ala | Val | Asn | Tyr | Gln | Pro | Ala | Lys | Tyr | Thr | Arg | Ile |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Leu | Ala | Asp | Lys | Val | Gly | Cys | Asn | Met | Leu | Asp | Thr | Thr | Asp | Met |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Val | Glu | Cys | Leu | Arg | Asn | Lys | Asn | Tyr | Lys | Glu | Leu | Ile | Gln | Gln |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Thr | Ile | Thr | Pro | Ala | Thr | Tyr | His | Ile | Ala | Phe | Gly | Pro | Val | Ile |
| | | | | 335 | | | | | 340 | | | | | 345 |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Asp Gly Asp Val | Ile Pro Asp Asp Pro | Gln Ile Leu Met Glu Gln | 350 | 355 | 360 |
| Gly Glu Phe Leu | Asn Tyr Asp Ile Met | Leu Gly Val Asn Gln Gly | 365 | 370 | 375 |
| Glu Gly Leu Lys | Phe Val Asp Gly Ile | Val Asp Asn Glu Asp Gly | 380 | 385 | 390 |
| Val Thr Pro Asn | Asp Phe Asp Phe Ser | Val Ser Asn Phe Val Asp | 395 | 400 | 405 |
| Asn Leu Tyr Gly | Tyr Pro Glu Gly Lys | Asp Thr Leu Arg Glu Thr | 410 | 415 | 420 |
| Ile Lys Phe Met | Tyr Thr Asp Trp Ala | Asp Lys Glu Asn Pro Glu | 425 | 430 | 435 |
| Thr Arg Arg Lys | Thr Leu Val Ala Leu | Phe Thr Asp His Gln Trp | 440 | 445 | 450 |
| Val Ala Pro Ala | Val Ala Ala Asp Leu | His Ala Gln Tyr Gly Ser | 455 | 460 | 465 |
| Pro Thr Tyr Phe | Tyr Ala Phe Tyr His | His Cys Gln Ser Glu Met | 470 | 475 | 480 |
| Lys Pro Ser Trp | Ala Asp Ser Ala His | Gly Asp Glu Val Pro Tyr | 485 | 490 | 495 |
| Val Phe Gly Ile | Pro Met Ile Gly Pro | Thr Glu Leu Phe Ser Cys | 500 | 505 | 510 |
| Asn Phe Ser Lys | Asn Asp Val Met Leu | Ser Ala Val Val Met Thr | 515 | 520 | 525 |
| Tyr Trp Thr Asn | Phe Ala Lys Thr Gly | Asp Pro Asn Gln Pro Val | 530 | 535 | 540 |
| Pro Gln Asp Thr | Lys Phe Ile His Thr | Lys Pro Asn Arg Phe Glu | 545 | 550 | 555 |
| Glu Val Ala Trp | Ser Lys Tyr Asn Pro | Lys Asp Gln Leu Tyr Leu | 560 | 565 | 570 |
| His Ile Gly Leu | Lys Pro Arg Val Arg | Asp His Tyr Arg Ala Thr | 575 | 580 | 585 |
| Lys Val Ala Phe | Trp Leu Glu Leu Val | Pro His Leu His Asn Leu | 590 | 595 | 600 |
| Asn Glu Ile Phe | Gln Tyr Val Ser Thr | Thr Thr Lys Val Pro Pro | 605 | 610 | 615 |
| Pro Asp Met Thr | Ser Phe Pro Tyr Gly | Thr Arg Arg Ser Pro Ala | 620 | 625 | 630 |
| Lys Ile Trp Pro | Thr Thr Lys Arg Pro | Ala Ile Thr Pro Ala Asn | | | |

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<211> 348

<212> PRT

<213> Homo sapiens

<400> 380

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| Met | Ala | Ala | Thr | Leu | Gly | Pro | Leu | Gly | Ser | Trp | Gln | Gln | Trp | Arg |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Arg | Cys | Leu | Ser | Ala | Arg | Asp | Gly | Ser | Arg | Met | Leu | Leu | Leu | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Leu | Leu | Gly | Ser | Gly | Gln | Gly | Pro | Gln | Gln | Val | Gly | Ala | Gly |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Gln | Thr | Phe | Glu | Tyr | Leu | Lys | Arg | Glu | His | Ser | Leu | Ser | Lys | Pro |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Tyr | Gln | Gly | Val | Gly | Thr | Gly | Ser | Ser | Ser | Leu | Trp | Asn | Leu | Met |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Gly | Asn | Ala | Met | Val | Met | Thr | Gln | Tyr | Ile | Arg | Leu | Thr | Pro | Asp |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Met | Gln | Ser | Lys | Gln | Gly | Ala | Leu | Trp | Asn | Arg | Val | Pro | Cys | Phe |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Arg | Asp | Trp | Glu | Leu | Gln | Val | His | Phe | Lys | Ile | His | Gly | Gln |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Gly | Lys | Lys | Asn | Leu | His | Gly | Asp | Gly | Leu | Ala | Ile | Trp | Tyr | Thr |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Lys | Asp | Arg | Met | Gln | Pro | Gly | Pro | Val | Phe | Gly | Asn | Met | Asp | Lys |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Phe | Val | Gly | Leu | Gly | Val | Phe | Val | Asp | Thr | Tyr | Pro | Asn | Glu | Glu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Lys | Gln | Gln | Glu | Arg | Val | Phe | Pro | Tyr | Ile | Ser | Ala | Met | Val | Asn |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Asn | Gly | Ser | Leu | Ser | Tyr | Asp | His | Glu | Arg | Asp | Gly | Arg | Pro | Thr |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Glu | Leu | Gly | Gly | Cys | Thr | Ala | Ile | Val | Arg | Asn | Leu | His | Tyr | Asp |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Thr | Phe | Leu | Val | Ile | Arg | Tyr | Val | Lys | Arg | His | Leu | Thr | Ile | Met |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Met | Asp | Ile | Asp | Gly | Lys | His | Glu | Trp | Arg | Asp | Cys | Ile | Glu | Val |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Pro | Gly | Val | Arg | Leu | Pro | Arg | Gly | Tyr | Tyr | Phe | Gly | Thr | Ser | Ser |
| | | | | 245 | | | | | 250 | | | | | 255 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Thr | Gly | Asp | Leu | Ser | Asp | Asn | His | Asp | Val | Ile | Ser | Leu | Lys |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Leu | Phe | Glu | Leu | Thr | Val | Glu | Arg | Thr | Pro | Glu | Glu | Glu | Lys | Leu |
| | | | | 275 | | | | | 280 | | | | | 285 |
| His | Arg | Asp | Val | Phe | Leu | Pro | Ser | Val | Asp | Asn | Met | Lys | Leu | Pro |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Glu | Met | Thr | Ala | Pro | Leu | Pro | Pro | Leu | Ser | Gly | Leu | Ala | Leu | Phe |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Leu | Ile | Val | Phe | Phe | Ser | Leu | Val | Phe | Ser | Val | Phe | Ala | Ile | Val |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Ile | Gly | Ile | Ile | Leu | Tyr | Asn | Lys | Trp | Gln | Glu | Gln | Ser | Arg | Lys |
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Arg Phe Tyr

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<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 381

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<210> 382

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 382

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<210> 383

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 383

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<210> 384

<211> 3150

<212> DNA

<213> Homo sapiens

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<211> 480

<212> PRT

<213> Homo sapiens

<400> 385

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| Met | Leu | Phe | Arg | Asn | Arg | Phe | Leu | Leu | Leu | Leu | Ala | Leu | Ala | Ala | 1 | 5 | 10 | 15 |
| Leu | Leu | Ala | Phe | Val | Ser | Leu | Ser | Leu | Gln | Phe | Phe | His | Leu | Ile | 20 | 25 | 30 | |
| Pro | Val | Ser | Thr | Pro | Lys | Asn | Gly | Met | Ser | Ser | Lys | Ser | Arg | Lys | 35 | 40 | 45 | |
| Arg | Ile | Met | Pro | Asp | Pro | Val | Thr | Glu | Pro | Pro | Val | Thr | Asp | Pro | 50 | 55 | 60 | |
| Val | Tyr | Glu | Ala | Leu | Leu | Tyr | Cys | Asn | Ile | Pro | Ser | Val | Ala | Glu | 65 | 70 | 75 | |
| Arg | Ser | Met | Glu | Gly | His | Ala | Pro | His | His | Phe | Lys | Leu | Val | Ser | 80 | 85 | 90 | |
| Val | His | Val | Phe | Ile | Arg | His | Gly | Asp | Arg | Tyr | Pro | Leu | Tyr | Val | 95 | 100 | 105 | |
| Ile | Pro | Lys | Thr | Lys | Arg | Pro | Glu | Ile | Asp | Cys | Thr | Leu | Val | Ala | 110 | 115 | 120 | |
| Asn | Arg | Lys | Pro | Tyr | His | Pro | Lys | Leu | Glu | Ala | Phe | Ile | Ser | His | 125 | 130 | 135 | |
| Met | Ser | Lys | Gly | Ser | Gly | Ala | Ser | Phe | Glu | Ser | Pro | Leu | Asn | Ser | 140 | 145 | 150 | |
| Leu | Pro | Leu | Tyr | Pro | Asn | His | Pro | Leu | Cys | Glu | Met | Gly | Glu | Leu | 155 | 160 | 165 | |
| Thr | Gln | Thr | Gly | Val | Val | Gln | His | Leu | Gln | Asn | Gly | Gln | Leu | Leu | 170 | 175 | 180 | |
| Arg | Asp | Ile | Tyr | Leu | Lys | Lys | His | Lys | Leu | Leu | Pro | Asn | Asp | Trp | 185 | 190 | 195 | |
| Ser | Ala | Asp | Gln | Leu | Tyr | Leu | Glu | Thr | Thr | Gly | Lys | Ser | Arg | Thr | 200 | 205 | 210 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Gln | Ser | Gly | Leu | Ala | Leu | Leu | Tyr | Gly | Phe | Leu | Pro | Asp | Phe | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Asp | Trp | Lys | Lys | Ile | Tyr | Phe | Arg | His | Gln | Pro | Ser | Ala | Leu | Phe | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Cys | Ser | Gly | Ser | Cys | Tyr | Cys | Pro | Val | Arg | Asn | Gln | Tyr | Leu | Glu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Lys | Glu | Gln | Arg | Arg | Gln | Tyr | Leu | Leu | Arg | Leu | Lys | Asn | Ser | Gln | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Leu | Glu | Lys | Thr | Tyr | Gly | Glu | Met | Ala | Lys | Ile | Val | Asp | Val | Pro | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Thr | Lys | Gln | Leu | Arg | Ala | Ala | Asn | Pro | Ile | Asp | Ser | Met | Leu | Cys | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| His | Phe | Cys | His | Asn | Val | Ser | Phe | Pro | Cys | Thr | Arg | Asn | Gly | Cys | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Val | Asp | Met | Glu | His | Phe | Lys | Val | Ile | Lys | Thr | His | Gln | Ile | Glu | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Asp | Glu | Arg | Glu | Arg | Arg | Glu | Lys | Lys | Leu | Tyr | Phe | Gly | Tyr | Ser | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Leu | Leu | Gly | Ala | His | Pro | Ile | Leu | Asn | Gln | Thr | Ile | Gly | Arg | Met | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Gln | Arg | Ala | Thr | Glu | Gly | Arg | Lys | Glu | Glu | Leu | Phe | Ala | Leu | Tyr | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Ser | Ala | His | Asp | Val | Thr | Leu | Ser | Pro | Val | Leu | Ser | Ala | Leu | Gly | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Leu | Ser | Glu | Ala | Arg | Phe | Pro | Arg | Phe | Ala | Ala | Arg | Leu | Ile | Phe | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Glu | Leu | Trp | Gln | Asp | Arg | Glu | Lys | Pro | Ser | Glu | His | Ser | Val | Arg | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Ile | Leu | Tyr | Asn | Gly | Val | Asp | Val | Thr | Phe | His | Thr | Ser | Phe | Cys | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Gln | Asp | His | His | Lys | Arg | Ser | Pro | Lys | Pro | Met | Cys | Pro | Leu | Glu | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Asn | Leu | Val | Arg | Phe | Val | Lys | Arg | Asp | Met | Phe | Val | Ala | Leu | Gly | |
| | | | | 455 | | | | | 460 | | | | | 465 | |
| Gly | Ser | Gly | Thr | Asn | Tyr | Tyr | Asp | Ala | Cys | His | Arg | Glu | Gly | Phe | |
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<213> Homo sapiens

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<210> 390
 <211> 916
 <212> PRT
 <213> Homo sapiens
 <400> 390

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| Met | Ile | Pro | Ala | Arg | Leu | His | Arg | Asp | Tyr | Lys | Gly | Leu | Val | Leu | | 1 | 5 | 10 | 15 |
| Leu | Gly | Ile | Leu | Leu | Gly | Thr | Leu | Trp | Glu | Thr | Gly | Cys | Thr | Gln | | 20 | 25 | 30 | |
| Ile | Arg | Tyr | Ser | Val | Pro | Glu | Glu | Leu | Glu | Lys | Gly | Ser | Arg | Val | | 35 | 40 | 45 | |
| Gly | Asp | Ile | Ser | Arg | Asp | Leu | Gly | Leu | Glu | Pro | Arg | Glu | Leu | Ala | | 50 | 55 | 60 | |
| Glu | Arg | Gly | Val | Arg | Ile | Ile | Pro | Arg | Gly | Arg | Thr | Gln | Leu | Phe | | 65 | 70 | 75 | |
| Ala | Leu | Asn | Pro | Arg | Ser | Gly | Ser | Leu | Val | Thr | Ala | Gly | Arg | Ile | | 80 | 85 | 90 | |
| Asp | Arg | Glu | Glu | Leu | Cys | Met | Gly | Ala | Ile | Lys | Cys | Gln | Leu | Asn | | 95 | 100 | 105 | |
| Leu | Asp | Ile | Leu | Met | Glu | Asp | Lys | Val | Lys | Ile | Tyr | Gly | Val | Glu | | 110 | 115 | 120 | |
| Val | Glu | Val | Arg | Asp | Ile | Asn | Asp | Asn | Ala | Pro | Tyr | Phe | Arg | Glu | | 125 | 130 | 135 | |
| Ser | Glu | Leu | Glu | Ile | Lys | Ile | Ser | Glu | Asn | Ala | Ala | Thr | Glu | Met | | 140 | 145 | 150 | |
| Arg | Phe | Pro | Leu | Pro | His | Ala | Trp | Asp | Pro | Asp | Ile | Gly | Lys | Asn | | 155 | 160 | 165 | |
| Ser | Leu | Gln | Ser | Tyr | Glu | Leu | Ser | Pro | Asn | Thr | His | Phe | Ser | Leu | | 170 | 175 | 180 | |
| Ile | Val | Gln | Asn | Gly | Ala | Asp | Gly | Ser | Lys | Tyr | Pro | Glu | Leu | Val | | 185 | 190 | 195 | |
| Leu | Lys | Arg | Ala | Leu | Asp | Arg | Glu | Glu | Lys | Ala | Ala | His | His | Leu | | 200 | 205 | 210 | |
| Val | Leu | Thr | Ala | Ser | Asp | Gly | Gly | Asp | Pro | Val | Arg | Thr | Gly | Thr | | 215 | 220 | 225 | |
| Ala | Arg | Ile | Arg | Val | Met | Val | Leu | Asp | Ala | Asn | Asp | Asn | Ala | Pro | | 230 | 235 | 240 | |
| Ala | Phe | Ala | Gln | Pro | Glu | Tyr | Arg | Ala | Ser | Val | Pro | Glu | Asn | Leu | | 245 | 250 | 255 | |
| Ala | Leu | Gly | Thr | Gln | Leu | Leu | Val | Val | Asn | Ala | Thr | Asp | Pro | Asp | | 260 | 265 | 270 | |
| Glu | Gly | Val | Asn | Ala | Glu | Val | Arg | Tyr | Ser | Phe | Arg | Tyr | Val | Asp | | 275 | 280 | 285 | |
| Asp | Lys | Ala | Ala | Gln | Val | Phe | Lys | Leu | Asp | Cys | Asn | Ser | Gly | Thr | | | | | |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|--|-----|
| | 290 | | 295 | | 300 |
| Ile Ser Thr Ile | Gly Glu Leu Asp His | Glu Glu Ser Gly Phe Tyr | | | |
| | 305 | 310 | | | 315 |
| Gln Met Glu Val | Gln Ala Met Asp Asn | Ala Gly Tyr Ser Ala Arg | | | |
| | 320 | 325 | | | 330 |
| Ala Lys Val Leu | Ile Thr Val Leu Asp | Val Asn Asp Asn Ala Pro | | | |
| | 335 | 340 | | | 345 |
| Glu Val Val Leu | Thr Ser Leu Ala Ser | Ser Val Pro Glu Asn Ser | | | |
| | 350 | 355 | | | 360 |
| Pro Arg Gly Thr | Leu Ile Ala Leu Leu | Asn Val Asn Asp Gln Asp | | | |
| | 365 | 370 | | | 375 |
| Ser Glu Glu Asn | Gly Gln Val Ile Cys | Phe Ile Gln Gly Asn Leu | | | |
| | 380 | 385 | | | 390 |
| Pro Phe Lys Leu | Glu Lys Ser Tyr Gly | Asn Tyr Tyr Ser Leu Val | | | |
| | 395 | 400 | | | 405 |
| Thr Asp Ile Val | Leu Asp Arg Glu Gln | Val Pro Ser Tyr Asn Ile | | | |
| | 410 | 415 | | | 420 |
| Thr Val Thr Ala | Thr Asp Arg Gly Thr | Pro Pro Leu Ser Thr Glu | | | |
| | 425 | 430 | | | 435 |
| Thr His Ile Ser | Leu Asn Val Ala Asp | Thr Asn Asp Asn Pro Pro | | | |
| | 440 | 445 | | | 450 |
| Val Phe Pro Gln | Ala Ser Tyr Ser Ala | Tyr Ile Pro Glu Asn Asn | | | |
| | 455 | 460 | | | 465 |
| Pro Arg Gly Val | Ser Leu Val Ser Val | Thr Ala His Asp Pro Asp | | | |
| | 470 | 475 | | | 480 |
| Cys Glu Glu Asn | Ala Gln Ile Thr Tyr | Ser Leu Ala Glu Asn Thr | | | |
| | 485 | 490 | | | 495 |
| Ile Gln Gly Ala | Ser Leu Ser Ser Tyr | Val Ser Ile Asn Ser Asp | | | |
| | 500 | 505 | | | 510 |
| Thr Gly Val Leu | Tyr Ala Leu Ser Ser | Phe Asp Tyr Glu Gln Phe | | | |
| | 515 | 520 | | | 525 |
| Arg Asp Leu Gln | Val Lys Val Met Ala | Arg Asp Asn Gly His Pro | | | |
| | 530 | 535 | | | 540 |
| Pro Leu Ser Ser | Asn Val Ser Leu Ser | Leu Phe Val Leu Asp Gln | | | |
| | 545 | 550 | | | 555 |
| Asn Asp Asn Ala | Pro Glu Ile Leu Tyr | Pro Ala Leu Pro Thr Asp | | | |
| | 560 | 565 | | | 570 |
| Gly Ser Thr Gly | Val Glu Leu Ala Pro | Arg Ser Ala Glu Pro Gly | | | |
| | 575 | 580 | | | 585 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Tyr | Leu | Val | Thr | Lys | Val | Val | Ala | Val | Asp | Arg | Asp | Ser | Gly | Gln | |
| | | | | 590 | | | | | 595 | | | | | 600 | |
| Asn | Ala | Trp | Leu | Ser | Tyr | Arg | Leu | Leu | Lys | Ala | Ser | Glu | Pro | Gly | |
| | | | | 605 | | | | | 610 | | | | | 615 | |
| Leu | Phe | Ser | Val | Gly | Leu | His | Thr | Gly | Glu | Val | Arg | Thr | Ala | Arg | |
| | | | | 620 | | | | | 625 | | | | | 630 | |
| Ala | Leu | Leu | Asp | Arg | Asp | Ala | Leu | Lys | Gln | Ser | Leu | Val | Val | Ala | |
| | | | | 635 | | | | | 640 | | | | | 645 | |
| Val | Gln | Asp | His | Gly | Gln | Pro | Pro | Leu | Ser | Ala | Thr | Val | Thr | Leu | |
| | | | | 650 | | | | | 655 | | | | | 660 | |
| Thr | Val | Ala | Val | Ala | Asp | Ser | Ile | Pro | Gln | Val | Leu | Ala | Asp | Leu | |
| | | | | 665 | | | | | 670 | | | | | 675 | |
| Gly | Ser | Leu | Glu | Ser | Pro | Ala | Asn | Ser | Glu | Thr | Ser | Asp | Leu | Thr | |
| | | | | 680 | | | | | 685 | | | | | 690 | |
| Leu | Tyr | Leu | Val | Val | Ala | Val | Ala | Ala | Val | Ser | Cys | Val | Phe | Leu | |
| | | | | 695 | | | | | 700 | | | | | 705 | |
| Ala | Phe | Val | Ile | Leu | Leu | Leu | Ala | Leu | Arg | Leu | Arg | Arg | Trp | His | |
| | | | | 710 | | | | | 715 | | | | | 720 | |
| Lys | Ser | Arg | Leu | Leu | Gln | Ala | Ser | Gly | Gly | Gly | Leu | Thr | Gly | Ala | |
| | | | | 725 | | | | | 730 | | | | | 735 | |
| Pro | Ala | Ser | His | Phe | Val | Gly | Val | Asp | Gly | Val | Gln | Ala | Phe | Leu | |
| | | | | 740 | | | | | 745 | | | | | 750 | |
| Gln | Thr | Tyr | Ser | His | Glu | Val | Ser | Leu | Thr | Thr | Asp | Ser | Arg | Lys | |
| | | | | 755 | | | | | 760 | | | | | 765 | |
| Ser | His | Leu | Ile | Phe | Pro | Gln | Pro | Asn | Tyr | Ala | Asp | Met | Leu | Val | |
| | | | | 770 | | | | | 775 | | | | | 780 | |
| Ser | Gln | Glu | Ser | Phe | Glu | Lys | Ser | Glu | Pro | Leu | Leu | Leu | Ser | Gly | |
| | | | | 785 | | | | | 790 | | | | | 795 | |
| Asp | Ser | Val | Phe | Ser | Lys | Asp | Ser | His | Gly | Leu | Ile | Glu | Val | Ser | |
| | | | | 800 | | | | | 805 | | | | | 810 | |
| Leu | Tyr | Gln | Ile | Phe | Phe | Leu | Phe | Phe | Phe | Asn | Cys | Ser | Val | Ser | |
| | | | | 815 | | | | | 820 | | | | | 825 | |
| Gln | Ala | Gly | Val | Gln | Arg | Tyr | Asp | His | Ser | Ser | Leu | Arg | Pro | Gln | |
| | | | | 830 | | | | | 835 | | | | | 840 | |
| Thr | Pro | Arg | Leu | Lys | Gln | Leu | Ser | His | Leu | Cys | Leu | Arg | Cys | Asn | |
| | | | | 845 | | | | | 850 | | | | | 855 | |
| Arg | Asp | Tyr | Arg | Cys | Lys | Pro | Pro | Thr | Val | Cys | Leu | Ser | Ile | Tyr | |
| | | | | 860 | | | | | 865 | | | | | 870 | |
| Leu | Ser | Ile | Tyr | Leu | Ser | Ile | Tyr | Leu | Ser | Ile | Tyr | Leu | Leu | Leu | |

| | | | | | |
|---|-----|--|-----|--|-----|
| | 875 | | 880 | | 885 |
| Ser Cys Thr Asp Gly Ser Leu Thr Pro Val Ile Pro Val Leu Trp | | | | | |
| | 890 | | 895 | | 900 |
| Glu Ala Glu Ala Gly Gly Ser Pro Glu Val Gly Ser Leu Arg Pro | | | | | |
| | 905 | | 910 | | 915 |

Ala

<210> 391

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 391

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<210> 392

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<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 392

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<210> 393

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 393

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<210> 394

<211> 999

<212> DNA

<213> Homo sapiens

<400> 394

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ctggaagacc tcaccatggg acgccccga cctcgtgcgg ccaagacgtg 200

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 ctaggataag cactagatct cccttaataa actcacaact ctctggttc 999

<210> 395

<211> 260

<212> PRT

<213> Homo sapiens

<400> 395

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Arg | Pro | Arg | Pro | Arg | Ala | Ala | Lys | Thr | Trp | Met | Phe | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Leu | Leu | Gly | Gly | Ala | Trp | Ala | Gly | His | Ser | Arg | Ala | Gln | Glu |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Asp | Lys | Val | Leu | Gly | Gly | His | Glu | Cys | Gln | Pro | His | Ser | Gln | Pro |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Trp | Gln | Ala | Ala | Leu | Phe | Gln | Gly | Gln | Gln | Leu | Leu | Cys | Gly | Gly |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Val | Leu | Val | Gly | Gly | Asn | Trp | Val | Leu | Thr | Ala | Ala | His | Cys | Lys |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Lys | Pro | Lys | Tyr | Thr | Val | Arg | Leu | Gly | Asp | His | Ser | Leu | Gln | Asn |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Lys | Asp | Gly | Pro | Glu | Gln | Glu | Ile | Pro | Val | Val | Gln | Ser | Ile | Pro |
| | | | 95 | | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Pro | Cys | Tyr | Asn | Ser | Ser | Asp | Val | Glu | Asp | His | Asn | His | Asp |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Leu | Met | Leu | Leu | Gln | Leu | Arg | Asp | Gln | Ala | Ser | Leu | Gly | Ser | Lys |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Val | Lys | Pro | Ile | Ser | Leu | Ala | Asp | His | Cys | Thr | Gln | Pro | Gly | Gln |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Lys | Cys | Thr | Val | Ser | Gly | Trp | Gly | Thr | Val | Thr | Ser | Pro | Arg | Glu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Asn | Phe | Pro | Asp | Thr | Leu | Asn | Cys | Ala | Glu | Val | Lys | Ile | Phe | Pro |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Gln | Lys | Lys | Cys | Glu | Asp | Ala | Tyr | Pro | Gly | Gln | Ile | Thr | Asp | Gly |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Met | Val | Cys | Ala | Gly | Ser | Ser | Lys | Gly | Ala | Asp | Thr | Cys | Gln | Gly |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Asp | Ser | Gly | Gly | Pro | Leu | Val | Cys | Asp | Gly | Ala | Leu | Gln | Gly | Ile |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Thr | Ser | Trp | Gly | Ser | Asp | Pro | Cys | Gly | Arg | Ser | Asp | Lys | Pro | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Val | Tyr | Thr | Asn | Ile | Cys | Arg | Tyr | Leu | Asp | Trp | Ile | Lys | Lys | Ile |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Ile | Gly | Ser | Lys | Gly | | | | | | | | | | |
| | | | | 260 | | | | | | | | | | |

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<220>
 <223> Synthetic oligonucleotide probe

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<210> 397
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 397
 ggtgcaatga tctgccaggc tgat 24

<210> 398
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<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 398

agaaatacct gtggttcagt ccattccaaa cccctgctac aacagcag 48

<210> 399

<211> 2236

<212> DNA

<213> Homo sapiens

<400> 399

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gccccgccc gggcccgccgc ccgcgcccgc gccaggtga gcgctccgcc 150
cgccgcgagg ccccgccccg gcccgcccc gcccgcccc ggccggcggg 200
ggaaccgggc ggattcctcg cgcgtcaaac cacctgatcc cataaaacat 250
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cccaaccct acgatgaaga gggcgccgc tggagggagc cggctgctgg 550
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 cgctggtgct gtggacagtg cttgggccc gctgacccc agcggacaca 1950
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<210> 400

<211> 473

<212> PRT

<213> Homo sapiens

<400> 400

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Arg | Ala | Ser | Ala | Gly | Gly | Ser | Arg | Leu | Leu | Ala | Trp | Val |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |
| Leu | Trp | Leu | Gln | Ala | Trp | Gln | Val | Ala | Ala | Pro | Cys | Pro | Gly | Ala |
| | | | 20 | | | | | 25 | | | | | 30 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Cys | Val | Cys | Tyr | Asn | Glu | Pro | Lys | Val | Thr | Thr | Ser | Cys | Pro | Gln | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Gln | Gly | Leu | Gln | Ala | Val | Pro | Val | Gly | Ile | Pro | Ala | Ala | Ser | Gln | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Arg | Ile | Phe | Leu | His | Gly | Asn | Arg | Ile | Ser | His | Val | Pro | Ala | Ala | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Ser | Phe | Arg | Ala | Cys | Arg | Asn | Leu | Thr | Ile | Leu | Trp | Leu | His | Ser | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Asn | Val | Leu | Ala | Arg | Ile | Asp | Ala | Ala | Ala | Phe | Thr | Gly | Leu | Ala | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Leu | Leu | Glu | Gln | Leu | Asp | Leu | Ser | Asp | Asn | Ala | Gln | Leu | Arg | Ser | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Val | Asp | Pro | Ala | Thr | Phe | His | Gly | Leu | Gly | Arg | Leu | His | Thr | Leu | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| His | Leu | Asp | Arg | Cys | Gly | Leu | Gln | Glu | Leu | Gly | Pro | Gly | Leu | Phe | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Arg | Gly | Leu | Ala | Ala | Leu | Gln | Tyr | Leu | Tyr | Leu | Gln | Asp | Asn | Ala | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Gln | Ala | Leu | Pro | Asp | Asp | Thr | Phe | Arg | Asp | Leu | Gly | Asn | Leu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Thr | His | Leu | Phe | Leu | His | Gly | Asn | Arg | Ile | Ser | Ser | Val | Pro | Glu | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Arg | Ala | Phe | Arg | Gly | Leu | His | Ser | Leu | Asp | Arg | Leu | Leu | Leu | His | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Gln | Asn | Arg | Val | Ala | His | Val | His | Pro | His | Ala | Phe | Arg | Asp | Leu | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Gly | Arg | Leu | Met | Thr | Leu | Tyr | Leu | Phe | Ala | Asn | Asn | Leu | Ser | Ala | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Leu | Pro | Thr | Glu | Ala | Leu | Ala | Pro | Leu | Arg | Ala | Leu | Gln | Tyr | Leu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Arg | Leu | Asn | Asp | Asn | Pro | Trp | Val | Cys | Asp | Cys | Arg | Ala | Arg | Pro | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Leu | Trp | Ala | Trp | Leu | Gln | Lys | Phe | Arg | Gly | Ser | Ser | Ser | Glu | Val | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Pro | Cys | Ser | Leu | Pro | Gln | Arg | Leu | Ala | Gly | Arg | Asp | Leu | Lys | Arg | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Leu | Ala | Ala | Asn | Asp | Leu | Gln | Gly | Cys | Ala | Val | Ala | Thr | Gly | Pro | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Tyr | His | Pro | Ile | Trp | Thr | Gly | Arg | Ala | Thr | Asp | Glu | Glu | Pro | Leu | |

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 320 | | 325 | | 330 |
| Gly Leu Pro Lys | Cys Cys Gln Pro Asp | Ala Ala Asp Lys Ala | Ser | | |
| | 335 | 340 | 345 | | |
| Val Leu Glu Pro | Gly Arg Pro Ala Ser | Ala Gly Asn Ala Leu | Lys | | |
| | 350 | 355 | 360 | | |
| Gly Arg Val Pro | Pro Gly Asp Ser Pro | Pro Gly Asn Gly Ser | Gly | | |
| | 365 | 370 | 375 | | |
| Pro Arg His Ile | Asn Asp Ser Pro Phe | Gly Thr Leu Pro Gly | Ser | | |
| | 380 | 385 | 390 | | |
| Ala Glu Pro Pro | Leu Thr Ala Val Arg | Pro Glu Gly Ser Glu | Pro | | |
| | 395 | 400 | 405 | | |
| Pro Gly Phe Pro | Thr Ser Gly Pro Arg | Arg Arg Pro Gly Cys | Ser | | |
| | 410 | 415 | 420 | | |
| Arg Lys Asn Arg | Thr Arg Ser His Cys | Arg Leu Gly Gln Ala | Gly | | |
| | 425 | 430 | 435 | | |
| Ser Gly Gly Gly | Gly Thr Gly Asp Ser | Glu Gly Ser Gly Ala | Leu | | |
| | 440 | 445 | 450 | | |
| Pro Ser Leu Thr | Cys Ser Leu Thr Pro | Leu Gly Leu Ala Leu | Val | | |
| | 455 | 460 | 465 | | |
| Leu Trp Thr Val | Leu Gly Pro Cys | | | | |
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 agctgaatcc agcaagaaca atggaggcca gcgggaagct catttgca 200
 caaaggcaag tccttttttc ctttctcctt ttgggcttat ctctggcggg 250
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 cctttgtcac caatttagca aaggacctgg gtctggagca gagggaattc 350
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 gctcaatcag gagaccggg atttgttgct aaatgagaaa ttggaccgtg 450
 aggatctgtg cggtcacaca gagccctgtg tgctacgttt ccaagtgttg 500
 ctagagagtc ctttcgagtt ttttcaagct gagctgcaag taatagacat 550
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attttgtggc atttccatgc caatgtttat ttcccccaat ttgtgtgtat 2650
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 <211> 798
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 <213> Homo sapiens

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 20 25 30
 Pro Arg Ser Tyr Ser Val Val Glu Glu Thr Glu Gly Ser Ser Phe
 35 40 45
 Val Thr Asn Leu Ala Lys Asp Leu Gly Leu Glu Gln Arg Glu Phe
 50 55 60
 Ser Arg Arg Gly Val Arg Val Val Ser Arg Gly Asn Lys Leu His
 65 70 75
 Leu Gln Leu Asn Gln Glu Thr Ala Asp Leu Leu Leu Asn Glu Lys
 80 85 90
 Leu Asp Arg Glu Asp Leu Cys Gly His Thr Glu Pro Cys Val Leu
 95 100 105
 Arg Phe Gln Val Leu Leu Glu Ser Pro Phe Glu Phe Phe Gln Ala
 110 115 120
 Glu Leu Gln Val Ile Asp Ile Asn Asp His Ser Pro Val Phe Leu
 125 130 135
 Asp Lys Gln Met Leu Val Lys Val Ser Glu Ser Ser Pro Pro Gly
 140 145 150
 Thr Thr Phe Pro Leu Lys Asn Ala Glu Asp Leu Asp Val Gly Gln
 155 160 165
 Asn Asn Ile Glu Asn Tyr Ile Ile Ser Pro Asn Ser Tyr Phe Arg
 170 175 180
 Val Leu Thr Arg Lys Arg Ser Asp Gly Arg Lys Tyr Pro Glu Leu
 185 190 195
 Val Leu Asp Lys Ala Leu Asp Arg Glu Glu Glu Ala Glu Leu Arg
 200 205 210
 Leu Thr Leu Thr Ala Leu Asp Gly Gly Ser Pro Pro Arg Ser Gly
 215 220 225
 Thr Ala Gln Val Tyr Ile Glu Val Leu Asp Val Asn Asp Asn Ala

| 230 | | | | | | | | | | 235 | | | | | 240 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Pro | Glu | Phe | Glu | Gln | Pro | Phe | Tyr | Arg | Val | Gln | Ile | Ser | Glu | Asp | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Ser | Pro | Val | Gly | Phe | Leu | Val | Val | Lys | Val | Ser | Ala | Thr | Asp | Val | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Asp | Thr | Gly | Val | Asn | Gly | Glu | Ile | Ser | Tyr | Ser | Leu | Phe | Gln | Ala | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Ser | Glu | Glu | Ile | Gly | Lys | Thr | Phe | Lys | Ile | Asn | Pro | Leu | Thr | Gly | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Glu | Ile | Glu | Leu | Lys | Lys | Gln | Leu | Asp | Phe | Glu | Lys | Leu | Gln | Ser | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Tyr | Glu | Val | Asn | Ile | Glu | Ala | Arg | Asp | Ala | Gly | Thr | Phe | Ser | Gly | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Lys | Cys | Thr | Val | Leu | Ile | Gln | Val | Ile | Asp | Val | Asn | Asp | His | Ala | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |
| Pro | Glu | Val | Thr | Met | Ser | Ala | Phe | Thr | Ser | Pro | Ile | Pro | Glu | Asn | | | | | |
| | | | | 350 | | | | | 355 | | | | | 360 | | | | | |
| Ala | Pro | Glu | Thr | Val | Val | Ala | Leu | Phe | Ser | Val | Ser | Asp | Leu | Asp | | | | | |
| | | | | 365 | | | | | 370 | | | | | 375 | | | | | |
| Ser | Gly | Glu | Asn | Gly | Lys | Ile | Ser | Cys | Ser | Ile | Gln | Glu | Asp | Leu | | | | | |
| | | | | 380 | | | | | 385 | | | | | 390 | | | | | |
| Pro | Phe | Leu | Leu | Lys | Ser | Ala | Glu | Asn | Phe | Tyr | Thr | Leu | Leu | Thr | | | | | |
| | | | | 395 | | | | | 400 | | | | | 405 | | | | | |
| Glu | Arg | Pro | Leu | Asp | Arg | Glu | Ser | Arg | Ala | Glu | Tyr | Asn | Ile | Thr | | | | | |
| | | | | 410 | | | | | 415 | | | | | 420 | | | | | |
| Ile | Thr | Val | Thr | Asp | Leu | Gly | Thr | Pro | Met | Leu | Ile | Thr | Gln | Leu | | | | | |
| | | | | 425 | | | | | 430 | | | | | 435 | | | | | |
| Asn | Met | Thr | Val | Leu | Ile | Ala | Asp | Val | Asn | Asp | Asn | Ala | Pro | Ala | | | | | |
| | | | | 440 | | | | | 445 | | | | | 450 | | | | | |
| Phe | Thr | Gln | Thr | Ser | Tyr | Thr | Leu | Phe | Val | Arg | Glu | Asn | Asn | Ser | | | | | |
| | | | | 455 | | | | | 460 | | | | | 465 | | | | | |
| Pro | Ala | Leu | His | Ile | Arg | Ser | Val | Ser | Ala | Thr | Asp | Arg | Asp | Ser | | | | | |
| | | | | 470 | | | | | 475 | | | | | 480 | | | | | |
| Gly | Thr | Asn | Ala | Gln | Val | Thr | Tyr | Ser | Leu | Leu | Pro | Pro | Gln | Asp | | | | | |
| | | | | 485 | | | | | 490 | | | | | 495 | | | | | |
| Pro | His | Leu | Pro | Leu | Thr | Ser | Leu | Val | Ser | Ile | Asn | Ala | Asp | Asn | | | | | |
| | | | | 500 | | | | | 505 | | | | | 510 | | | | | |
| Gly | His | Leu | Phe | Ala | Leu | Arg | Ser | Leu | Asp | Tyr | Glu | Ala | Leu | Gln | | | | | |
| | | | | 515 | | | | | 520 | | | | | 525 | | | | | |

| | | | |
|---|-----|-----|-----|
| Gly Phe Gln Phe Arg Val Gly Ala Ser Asp His Gly Ser Pro Ala | 530 | 535 | 540 |
| Leu Ser Ser Glu Ala Leu Val Arg Val Val Val Leu Asp Ala Asn | 545 | 550 | 555 |
| Asp Asn Ser Pro Phe Val Leu Tyr Pro Leu Gln Asn Gly Ser Ala | 560 | 565 | 570 |
| Pro Cys Thr Glu Leu Val Pro Arg Ala Ala Glu Pro Gly Tyr Leu | 575 | 580 | 585 |
| Val Thr Lys Val Val Ala Val Asp Gly Asp Ser Gly Gln Asn Ala | 590 | 595 | 600 |
| Trp Leu Ser Tyr Gln Leu Leu Lys Ala Thr Glu Leu Gly Leu Phe | 605 | 610 | 615 |
| Gly Val Trp Ala His Asn Gly Glu Val Arg Thr Ala Arg Leu Leu | 620 | 625 | 630 |
| Ser Glu Arg Asp Ala Ala Lys His Arg Leu Val Val Leu Val Lys | 635 | 640 | 645 |
| Asp Asn Gly Glu Pro Pro Arg Ser Ala Thr Ala Thr Leu His Val | 650 | 655 | 660 |
| Leu Leu Val Asp Gly Phe Ser Gln Pro Tyr Leu Pro Leu Pro Glu | 665 | 670 | 675 |
| Ala Ala Pro Thr Gln Ala Gln Ala Asp Leu Leu Thr Val Tyr Leu | 680 | 685 | 690 |
| Val Val Ala Leu Ala Ser Val Ser Ser Leu Phe Leu Phe Ser Val | 695 | 700 | 705 |
| Leu Leu Phe Val Ala Val Arg Leu Cys Arg Arg Ser Arg Ala Ala | 710 | 715 | 720 |
| Ser Val Gly Arg Cys Leu Val Pro Glu Gly Pro Leu Pro Gly His | 725 | 730 | 735 |
| Leu Val Asp Met Ser Gly Thr Arg Thr Leu Ser Gln Ser Tyr Gln | 740 | 745 | 750 |
| Tyr Glu Val Cys Leu Ala Gly Gly Ser Gly Thr Asn Glu Phe Lys | 755 | 760 | 765 |
| Phe Leu Lys Pro Ile Ile Pro Asn Phe Pro Pro Gln Cys Pro Gly | 770 | 775 | 780 |
| Lys Glu Ile Gln Gly Asn Ser Thr Phe Pro Asn Asn Phe Gly Phe | 785 | 790 | 795 |
| Asn Ile Gln | | | |

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<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

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<220>
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<210> 408
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gatcacatgg tgatgctgtc tgtgattcct ggggaagctg aggacaaagt 400
gagttcagag cctagcggcg tcacctgtgg tgctggagga gcggaggact 450
caagggtgcaa cgtccgagag agccttttct ctctggatgg cgctggagca 500

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| | | | | 80 | | | | | 85 | | | | | 90 |
| Met | Val | Met | Leu | Ser 95 | Val | Ile | Pro | Gly | Glu 100 | Ala | Glu | Asp | Lys | Val 105 |
| Ser | Ser | Glu | Pro | Ser 110 | Gly | Val | Thr | Cys | Gly 115 | Ala | Gly | Gly | Ala | Glu 120 |
| Asp | Ser | Arg | Cys | Asn 125 | Val | Arg | Glu | Ser | Leu 130 | Phe | Ser | Leu | Asp | Gly 135 |
| Ala | Gly | Ala | His | Phe 140 | Pro | Asp | Arg | Glu | Glu 145 | Glu | Tyr | Tyr | Thr | Glu 150 |
| Pro | Glu | Val | Ala | Glu 155 | Ser | Asp | Ala | Ala | Pro 160 | Thr | Glu | Asp | Ser | Asn 165 |
| Asn | Thr | Glu | Ser | Leu 170 | Lys | Ser | Pro | Lys | Val 175 | Asn | Cys | Glu | Glu | Arg 180 |
| Asn | Ile | Thr | Gly | Leu 185 | Glu | Asn | Phe | Thr | Leu 190 | Lys | Ile | Leu | Asn | Met 195 |
| Ser | Gln | Asp | Leu | Met 200 | Asp | Phe | Leu | Asn | Pro 205 | Asn | Gly | Ser | Asp | Cys 210 |
| Thr | Leu | Val | Leu | Phe 215 | Tyr | Thr | Pro | Trp | Cys 220 | Arg | Phe | Ser | Ala | Ser 225 |
| Leu | Ala | Pro | His | Phe 230 | Asn | Ser | Leu | Pro | Arg 235 | Ala | Phe | Pro | Ala | Leu 240 |
| His | Phe | Leu | Ala | Leu 245 | Asp | Ala | Ser | Gln | His 250 | Ser | Ser | Leu | Ser | Thr 255 |
| Arg | Phe | Gly | Thr | Val 260 | Ala | Val | Pro | Asn | Ile 265 | Leu | Leu | Phe | Gln | Gly 270 |
| Ala | Lys | Pro | Met | Ala 275 | Arg | Phe | Asn | His | Thr 280 | Asp | Arg | Thr | Leu | Glu 285 |
| Thr | Leu | Lys | Ile | Phe 290 | Ile | Phe | Asn | Gln | Thr 295 | Gly | Ile | Glu | Ala | Lys 300 |
| Lys | Asn | Val | Val | Val 305 | Thr | Gln | Ala | Asp | Gln 310 | Ile | Gly | Pro | Leu | Pro 315 |
| Ser | Thr | Leu | Ile | Lys 320 | Ser | Val | Asp | Trp | Leu 325 | Leu | Val | Phe | Ser | Leu 330 |
| Phe | Phe | Leu | Ile | Ser 335 | Phe | Ile | Met | Tyr | Ala 340 | Thr | Ile | Arg | Thr | Glu 345 |
| Ser | Ile | Arg | Trp | Leu 350 | Ile | Pro | Gly | Gln | Glu 355 | Gln | Glu | His | Val | Glu 360 |

$$\begin{array}{ll} \langle 210 \rangle & 411 \\ \langle 211 \rangle & 24 \end{array}$$

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 agcttcccc tgcttttgc acgtttgcat cccagcatt tcctgagtta 1100
 taaggccaca ggagtggata gctgttttca cctaaaggaa aagcccaccc 1150
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<210> 415

<211> 295

<212> PRT

<213> Homo sapiens

<400> 415

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Gln | Gly | Pro | Gly | Ser | Leu | Leu | Leu | Leu | Phe | Leu | Ala | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Cys | Cys | Leu | Gly | Ser | Ala | Arg | Gly | Leu | Phe | Leu | Phe | Gly | Gln |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Asp | Phe | Ser | Tyr | Lys | Arg | Ser | Asn | Cys | Lys | Pro | Ile | Pro | Val |
| | | | 35 | | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Leu | Gln | Leu | Cys | His | Gly | Ile | Glu | Tyr | Gln | Asn | Met | Arg | Leu |
| | | | 50 | | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Asn | Leu | Leu | Gly | His | Glu | Thr | Met | Lys | Glu | Val | Leu | Glu | Gln |
| | | | 65 | | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Gly | Ala | Trp | Ile | Pro | Leu | Val | Met | Lys | Gln | Cys | His | Pro | Asp |
| | | | 80 | | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Lys | Lys | Phe | Leu | Cys | Ser | Leu | Phe | Ala | Pro | Val | Cys | Leu | Asp |
| | | | 95 | | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Leu | Asp | Glu | Thr | Ile | Gln | Pro | Cys | His | Ser | Leu | Cys | Val | Gln |
| | | | 110 | | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Lys | Asp | Arg | Cys | Ala | Pro | Val | Met | Ser | Ala | Phe | Gly | Phe | Pro |
| | | | 125 | | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Trp | Pro | Asp | Met | Leu | Glu | Cys | Asp | Arg | Phe | Pro | Gln | Asp | Asn | Asp | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Leu | Cys | Ile | Pro | Leu | Ala | Ser | Ser | Asp | His | Leu | Leu | Pro | Ala | Thr | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Glu | Glu | Ala | Pro | Lys | Val | Cys | Glu | Ala | Cys | Lys | Asn | Lys | Asn | Asp | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Asp | Asp | Asn | Asp | Ile | Met | Glu | Thr | Leu | Cys | Lys | Asn | Asp | Phe | Ala | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Leu | Lys | Ile | Lys | Val | Lys | Glu | Ile | Thr | Tyr | Ile | Asn | Arg | Asp | Thr | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Lys | Ile | Ile | Leu | Glu | Thr | Lys | Ser | Lys | Thr | Ile | Tyr | Lys | Leu | Asn | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Gly | Val | Ser | Glu | Arg | Asp | Leu | Lys | Lys | Ser | Val | Leu | Trp | Leu | Lys | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Asp | Ser | Leu | Gln | Cys | Thr | Cys | Glu | Glu | Met | Asn | Asp | Ile | Asn | Ala | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Pro | Tyr | Leu | Val | Met | Gly | Gln | Lys | Gln | Gly | Gly | Glu | Leu | Val | Ile | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Thr | Ser | Val | Lys | Arg | Trp | Gln | Lys | Gly | Gln | Arg | Glu | Phe | Lys | Arg | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Ile | Ser | Arg | Ser | Ile | Arg | Lys | Leu | Gln | Cys | | | | | | |
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<210> 417

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<212> DNA

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<223> Synthetic oligonucleotide probe

<400> 417

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<210> 418

<211> 47

<212> DNA

<213> Artificial Sequence

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<211> 1830

<212> DNA

<213> Homo sapiens

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|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| | | | | 110 | | | | | 115 | | | | | 120 |
| Gly | Thr | Gln | Asn | Pro 125 | Phe | Ala | Phe | Leu | Met 130 | Gly | Gly | Gln | Ser | Leu 135 |
| Cys | Ala | Leu | Ala | Gln 140 | Ser | Leu | Val | Ile | Phe 145 | Ser | Pro | Ala | Lys | Leu 150 |
| Ala | Ala | Leu | Trp | Phe 155 | Pro | Glu | His | Gln | Arg 160 | Ala | Thr | Ala | Asn | Met 165 |
| Leu | Ala | Thr | Met | Ser 170 | Asn | Pro | Leu | Gly | Val 175 | Leu | Val | Ala | Asn | Val 180 |
| Leu | Ser | Pro | Val | Leu 185 | Val | Lys | Lys | Gly | Glu 190 | Asp | Ile | Pro | Leu | Met 195 |
| Leu | Gly | Val | Tyr | Thr 200 | Ile | Pro | Ala | Gly | Val 205 | Val | Cys | Leu | Leu | Ser 210 |
| Thr | Ile | Cys | Leu | Trp 215 | Glu | Ser | Val | Pro | Pro 220 | Thr | Pro | Pro | Ser | Ala 225 |
| Gly | Ala | Ala | Ser | Ser 230 | Thr | Ser | Glu | Lys | Phe 235 | Leu | Asp | Gly | Leu | Lys 240 |
| Leu | Gln | Leu | Met | Trp 245 | Asn | Lys | Ala | Tyr | Val 250 | Ile | Leu | Ala | Val | Cys 255 |
| Leu | Gly | Gly | Met | Ile 260 | Gly | Ile | Ser | Ala | Ser 265 | Phe | Ser | Ala | Leu | Leu 270 |
| Glu | Gln | Ile | Leu | Cys 275 | Ala | Ser | Gly | His | Ser 280 | Ser | Gly | Phe | Ser | Gly 285 |
| Leu | Cys | Gly | Ala | Leu 290 | Phe | Ile | Thr | Phe | Gly 295 | Ile | Leu | Gly | Ala | Leu 300 |
| Ala | Leu | Gly | Pro | Tyr 305 | Val | Asp | Arg | Thr | Lys 310 | His | Phe | Thr | Glu | Ala 315 |
| Thr | Lys | Ile | Gly | Leu 320 | Cys | Leu | Phe | Ser | Leu 325 | Ala | Cys | Val | Pro | Phe 330 |
| Ala | Leu | Val | Ser | Gln 335 | Leu | Gln | Gly | Gln | Thr 340 | Leu | Ala | Leu | Ala | Ala 345 |
| Thr | Cys | Ser | Leu | Leu 350 | Gly | Leu | Phe | Gly | Phe 355 | Ser | Val | Gly | Pro | Val 360 |
| Ala | Met | Glu | Leu | Ala 365 | Val | Glu | Cys | Ser | Phe 370 | Pro | Val | Gly | Glu | Gly 375 |
| Ala | Ala | Thr | Gly | Met 380 | Ile | Phe | Val | Leu | Gly 385 | Gln | Ala | Glu | Gly | Ile 390 |
| Leu | Ile | Met | Leu | Ala 395 | Met | Thr | Ala | Leu | Thr 400 | Val | Arg | Arg | Ser | Glu 405 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Pro | Ser | Leu | Ser | Thr | Cys | Gln | Gln | Gly | Glu | Asp | Pro | Leu | Asp | Trp | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Thr | Val | Ser | Leu | Leu | Leu | Met | Ala | Gly | Leu | Cys | Thr | Phe | Phe | Ser | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Cys | Ile | Leu | Ala | Val | Phe | Phe | His | Thr | Pro | Tyr | Arg | Arg | Leu | Gln | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Ala | Glu | Ser | Gly | Glu | Pro | Pro | Ser | Thr | Arg | Asn | Ala | Val | Gly | Gly | |
| | | | | 455 | | | | | 460 | | | | | 465 | |
| Ala | Asp | Ser | Gly | Pro | Gly | Val | Asp | Arg | Gly | Gly | Ala | Gly | Arg | Ala | |
| | | | | 470 | | | | | 475 | | | | | 480 | |
| Gly | Val | Leu | Gly | Pro | Ser | Thr | Ala | Thr | Pro | Glu | Cys | Thr | Ala | Arg | |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Gly | Ala | Ser | Leu | Glu | Asp | Pro | Arg | Gly | Pro | Gly | Ser | Pro | His | Pro | |
| | | | | 500 | | | | | 505 | | | | | 510 | |
| Ala | Cys | His | Arg | Ala | Thr | Pro | Arg | Ala | Gln | Gly | Pro | Ala | Ala | Thr | |
| | | | | 515 | | | | | 520 | | | | | 525 | |
| Asp | Ala | Pro | Ser | Arg | Pro | Gly | Arg | Leu | Ala | Gly | Arg | Val | Gln | Ala | |
| | | | | 530 | | | | | 535 | | | | | 540 | |
| Ser | Arg | Phe | Ile | Asp | Pro | Ala | Gly | Ser | His | Ser | Ser | Phe | Ser | Ser | |
| | | | | 545 | | | | | 550 | | | | | 555 | |
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<400> 425
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 Thr Val Lys Tyr Gln Val Ser Glu Glu Val Pro Ser Gly Thr Val
 35 40 45
 Ile Gly Lys Leu Ser Gln Glu Leu Gly Arg Glu Glu Arg Arg Arg
 50 55 60
 Gln Ala Gly Ala Ala Phe Gln Val Leu Gln Leu Pro Gln Ala Leu
 65 70 75
 Pro Ile Gln Val Asp Ser Glu Glu Gly Leu Leu Ser Thr Gly Arg
 80 85 90
 Arg Leu Asp Arg Glu Gln Leu Cys Arg Gln Trp Asp Pro Cys Leu
 95 100 105
 Val Ser Phe Asp Val Leu Ala Thr Gly Asp Leu Ala Leu Ile His
 110 115 120
 Val Glu Ile Gln Val Leu Asp Ile Asn Asp His Gln Pro Arg Phe
 125 130 135
 Pro Lys Gly Glu Gln Glu Leu Glu Ile Ser Glu Ser Ala Ser Leu
 140 145 150
 Arg Thr Arg Ile Pro Leu Asp Arg Ala Leu Asp Pro Asp Thr Gly
 155 160 165
 Pro Asn Thr Leu His Thr Tyr Thr Leu Ser Pro Ser Glu His Phe
 170 175 180
 Ala Leu Asp Val Ile Val Gly Pro Asp Glu Thr Lys His Ala Glu
 185 190 195

| | | | |
|-----------------|---------------------|---------------------|-----|
| Leu Ile Val Val | Lys Glu Leu Asp Arg | Glu Ile His Ser Phe | Phe |
| 200 | 205 | | 210 |
| Asp Leu Val Leu | Thr Ala Tyr Asp Asn | Gly Asn Pro Pro Lys | Ser |
| 215 | 220 | | 225 |
| Gly Thr Ser Leu | Val Lys Val Asn Val | Leu Asp Ser Asn Asp | Asn |
| 230 | 235 | | 240 |
| Ser Pro Ala Phe | Ala Glu Ser Ser Leu | Ala Leu Glu Ile Gln | Glu |
| 245 | 250 | | 255 |
| Asp Ala Ala Pro | Gly Thr Leu Leu Ile | Lys Leu Thr Ala Thr | Asp |
| 260 | 265 | | 270 |
| Pro Asp Gln Gly | Pro Asn Gly Glu Val | Glu Phe Phe Leu Ser | Lys |
| 275 | 280 | | 285 |
| His Met Pro Pro | Glu Val Leu Asp Thr | Phe Ser Ile Asp Ala | Lys |
| 290 | 295 | | 300 |
| Thr Gly Gln Val | Ile Leu Arg Arg Pro | Leu Asp Tyr Glu Lys | Asn |
| 305 | 310 | | 315 |
| Pro Ala Tyr Glu | Val Asp Val Gln Ala | Arg Asp Leu Gly Pro | Asn |
| 320 | 325 | | 330 |
| Pro Ile Pro Ala | His Cys Lys Val Leu | Ile Lys Val Leu Asp | Val |
| 335 | 340 | | 345 |
| Asn Asp Asn Ile | Pro Ser Ile His Val | Thr Trp Ala Ser Gln | Pro |
| 350 | 355 | | 360 |
| Ser Leu Val Ser | Glu Ala Leu Pro Lys | Asp Ser Phe Ile Ala | Leu |
| 365 | 370 | | 375 |
| Val Met Ala Asp | Asp Leu Asp Ser Gly | His Asn Gly Leu Val | His |
| 380 | 385 | | 390 |
| Cys Trp Leu Ser | Gln Glu Leu Gly His | Phe Arg Leu Lys Arg | Thr |
| 395 | 400 | | 405 |
| Asn Gly Asn Thr | Tyr Met Leu Leu Thr | Asn Ala Thr Leu Asp | Arg |
| 410 | 415 | | 420 |
| Glu Gln Trp Pro | Lys Tyr Thr Leu Thr | Leu Leu Ala Gln Asp | Gln |
| 425 | 430 | | 435 |
| Gly Leu Gln Pro | Leu Ser Ala Lys Lys | Gln Leu Ser Ile Gln | Ile |
| 440 | 445 | | 450 |
| Ser Asp Ile Asn | Asp Asn Ala Pro Val | Phe Glu Lys Ser Arg | Tyr |
| 455 | 460 | | 465 |
| Glu Val Ser Thr | Arg Glu Asn Asn Leu | Pro Ser Leu His Leu | Ile |
| 470 | 475 | | 480 |
| Thr Ile Lys Ala | His Asp Ala Asp Leu | Gly Ile Asn Gly Lys | Val |

| 485 | | | | | | | | | | 490 | | | | | 495 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Ser | Tyr | Arg | Ile | Gln | Asp | Ser | Pro | Val | Ala | His | Leu | Val | Ala | Ile | | | | | |
| | | | | 500 | | | | | 505 | | | | | 510 | | | | | |
| Asp | Ser | Asn | Thr | Gly | Glu | Val | Thr | Ala | Gln | Arg | Ser | Leu | Asn | Tyr | | | | | |
| | | | | 515 | | | | | 520 | | | | | 525 | | | | | |
| Glu | Glu | Met | Ala | Gly | Phe | Glu | Phe | Gln | Val | Ile | Ala | Glu | Asp | Ser | | | | | |
| | | | | 530 | | | | | 535 | | | | | 540 | | | | | |
| Gly | Gln | Pro | Met | Leu | Ala | Ser | Ser | Val | Ser | Val | Trp | Val | Ser | Leu | | | | | |
| | | | | 545 | | | | | 550 | | | | | 555 | | | | | |
| Leu | Asp | Ala | Asn | Asp | Asn | Ala | Pro | Glu | Val | Val | Gln | Pro | Val | Leu | | | | | |
| | | | | 560 | | | | | 565 | | | | | 570 | | | | | |
| Ser | Asp | Gly | Lys | Ala | Ser | Leu | Ser | Val | Leu | Val | Asn | Ala | Ser | Thr | | | | | |
| | | | | 575 | | | | | 580 | | | | | 585 | | | | | |
| Gly | His | Leu | Leu | Val | Pro | Ile | Glu | Thr | Pro | Asn | Gly | Leu | Gly | Pro | | | | | |
| | | | | 590 | | | | | 595 | | | | | 600 | | | | | |
| Ala | Gly | Thr | Asp | Thr | Pro | Pro | Leu | Ala | Thr | His | Ser | Ser | Arg | Pro | | | | | |
| | | | | 605 | | | | | 610 | | | | | 615 | | | | | |
| Phe | Leu | Leu | Thr | Thr | Ile | Val | Ala | Arg | Asp | Ala | Asp | Ser | Gly | Ala | | | | | |
| | | | | 620 | | | | | 625 | | | | | 630 | | | | | |
| Asn | Gly | Glu | Pro | Leu | Tyr | Ser | Ile | Arg | Asn | Gly | Asn | Glu | Ala | His | | | | | |
| | | | | 635 | | | | | 640 | | | | | 645 | | | | | |
| Leu | Phe | Ile | Leu | Asn | Pro | His | Thr | Gly | Gln | Leu | Phe | Val | Asn | Val | | | | | |
| | | | | 650 | | | | | 655 | | | | | 660 | | | | | |
| Thr | Asn | Ala | Ser | Ser | Leu | Ile | Gly | Ser | Glu | Trp | Glu | Leu | Glu | Ile | | | | | |
| | | | | 665 | | | | | 670 | | | | | 675 | | | | | |
| Val | Val | Glu | Asp | Gln | Gly | Ser | Pro | Pro | Leu | Gln | Thr | Arg | Ala | Leu | | | | | |
| | | | | 680 | | | | | 685 | | | | | 690 | | | | | |
| Leu | Arg | Val | Met | Phe | Val | Thr | Ser | Val | Asp | His | Leu | Arg | Asp | Ser | | | | | |
| | | | | 695 | | | | | 700 | | | | | 705 | | | | | |
| Ala | Arg | Lys | Pro | Gly | Ala | Leu | Ser | Met | Ser | Met | Leu | Thr | Val | Ile | | | | | |
| | | | | 710 | | | | | 715 | | | | | 720 | | | | | |
| Cys | Leu | Ala | Val | Leu | Leu | Gly | Ile | Phe | Gly | Leu | Ile | Leu | Ala | Leu | | | | | |
| | | | | 725 | | | | | 730 | | | | | 735 | | | | | |
| Phe | Met | Ser | Ile | Cys | Arg | Thr | Glu | Lys | Lys | Asp | Asn | Arg | Ala | Tyr | | | | | |
| | | | | 740 | | | | | 745 | | | | | 750 | | | | | |
| Asn | Cys | Arg | Glu | Ala | Glu | Ser | Thr | Tyr | Arg | Gln | Gln | Pro | Lys | Arg | | | | | |
| | | | | 755 | | | | | 760 | | | | | 765 | | | | | |
| Pro | Gln | Lys | His | Ile | Gln | Lys | Ala | Asp | Ile | His | Leu | Val | Pro | Val | | | | | |
| | | | | 770 | | | | | 775 | | | | | 780 | | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|--|
| Leu | Arg | Gly | Gln | Ala | Gly | Glu | Pro | Cys | Glu | Val | Gly | Gln | Ser | His | |
| | | | | 785 | | | | | 790 | | | | | 795 | |
| Lys | Asp | Val | Asp | Lys | Glu | Ala | Met | Met | Glu | Ala | Gly | Trp | Asp | Pro | |
| | | | | 800 | | | | | 805 | | | | | 810 | |
| Cys | Leu | Gln | Ala | Pro | Phe | His | Leu | Thr | Pro | Thr | Leu | Tyr | Arg | Thr | |
| | | | | 815 | | | | | 820 | | | | | 825 | |
| Leu | Arg | Asn | Gln | Gly | Asn | Gln | Gly | Ala | Pro | Ala | Glu | Ser | Arg | Glu | |
| | | | | 830 | | | | | 835 | | | | | 840 | |
| Val | Leu | Gln | Asp | Thr | Val | Asn | Leu | Leu | Phe | Asn | His | Pro | Arg | Gln | |
| | | | | 845 | | | | | 850 | | | | | 855 | |
| Arg | Asn | Ala | Ser | Arg | Glu | Asn | Leu | Asn | Leu | Pro | Glu | Pro | Gln | Pro | |
| | | | | 860 | | | | | 865 | | | | | 870 | |
| Ala | Thr | Gly | Gln | Pro | Arg | Ser | Arg | Pro | Leu | Lys | Val | Ala | Gly | Ser | |
| | | | | 875 | | | | | 880 | | | | | 885 | |
| Pro | Thr | Gly | Arg | Leu | Ala | Gly | Asp | Gln | Gly | Ser | Glu | Glu | Ala | Pro | |
| | | | | 890 | | | | | 895 | | | | | 900 | |
| Gln | Arg | Pro | Pro | Ala | Ser | Ser | Ala | Thr | Leu | Arg | Arg | Gln | Arg | His | |
| | | | | 905 | | | | | 910 | | | | | 915 | |
| Leu | Asn | Gly | Lys | Val | Ser | Pro | Glu | Lys | Glu | Ser | Gly | Pro | Arg | Gln | |
| | | | | 920 | | | | | 925 | | | | | 930 | |
| Ile | Leu | Arg | Ser | Leu | Val | Arg | Leu | Ser | Val | Ala | Ala | Phe | Ala | Glu | |
| | | | | 935 | | | | | 940 | | | | | 945 | |
| Arg | Asn | Pro | Val | Glu | Glu | Leu | Thr | Val | Asp | Ser | Pro | Pro | Val | Gln | |
| | | | | 950 | | | | | 955 | | | | | 960 | |
| Gln | Ile | Ser | Gln | Leu | Leu | Ser | Leu | Leu | His | Gln | Gly | Gln | Phe | Gln | |
| | | | | 965 | | | | | 970 | | | | | 975 | |
| Pro | Lys | Pro | Asn | His | Arg | Gly | Asn | Lys | Tyr | Leu | Ala | Lys | Pro | Gly | |
| | | | | 980 | | | | | 985 | | | | | 990 | |
| Gly | Ser | Arg | Ser | Ala | Ile | Pro | Asp | Thr | Asp | Gly | Pro | Ser | Ala | Arg | |
| | | | | 995 | | | | | 1000 | | | | | 1005 | |
| Ala | Gly | Gly | Gln | Thr | Asp | Pro | Glu | Gln | Glu | Glu | Gly | Pro | Leu | Asp | |
| | | | | 1010 | | | | | 1015 | | | | | 1020 | |
| Pro | Glu | Glu | Asp | Leu | Ser | Val | Lys | Gln | Leu | Leu | Glu | Glu | Glu | Leu | |
| | | | | 1025 | | | | | 1030 | | | | | 1035 | |
| Ser | Ser | Leu | Leu | Asp | Pro | Ser | Thr | Gly | Leu | Ala | Leu | Asp | Arg | Leu | |
| | | | | 1040 | | | | | 1045 | | | | | 1050 | |
| Ser | Ala | Pro | Asp | Pro | Ala | Trp | Met | Ala | Arg | Leu | Ser | Leu | Pro | Leu | |
| | | | | 1055 | | | | | 1060 | | | | | 1065 | |
| Thr | Thr | Asn | Tyr | Arg | Asp | Asn | Val | Ile | Ser | Pro | Asp | Ala | Ala | Ala | |

| | | |
|---|------|------|
| 1070 | 1075 | 1080 |
| Thr Glu Glu Pro Arg Thr Phe Gln Thr Phe Gly Lys Ala Glu Ala | | |
| 1085 | 1090 | 1095 |
| Pro Glu Leu Ser Pro Thr Gly Thr Arg Leu Ala Ser Thr Phe Val | | |
| 1100 | 1105 | 1110 |
| Ser Glu Met Ser Ser Leu Leu Glu Met Leu Leu Glu Gln Arg Ser | | |
| 1115 | 1120 | 1125 |
| Ser Met Pro Val Glu Ala Ala Ser Glu Ala Leu Arg Arg Leu Ser | | |
| 1130 | 1135 | 1140 |
| Val Cys Gly Arg Thr Leu Ser Leu Asp Leu Ala Thr Ser Ala Ala | | |
| 1145 | 1150 | 1155 |
| Ser Gly Met Lys Val Gln Gly Asp Pro Gly Gly Lys Thr Gly Thr | | |
| 1160 | 1165 | 1170 |
| Glu Gly Lys Ser Arg Gly Ser Ser Ser Ser Ser Arg Cys Leu | | |
| 1175 | 1180 | |

<210> 426
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 426
 gtaagcacat gcctccagag gtgc 24

<210> 427
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 427
 gtgacgtgga tgcttgggat gttg 24

<210> 428
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 428
 tggacacctt cagtattgat gccaaagacag gccaggtcat tctgcgtcga 50

<210> 429
 <211> 2037

<212> DNA
<213> Homo sapiens

<400> 429

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ggcctcgggg agtgggaagt ggaggcagga gccttcctta cacttcgcca 150
tgagtttcct catcgactcc agcatcatga ttacctocca gatactattt 200
tttggaattg ggtggctttt cttcatgcgc caattgttta aagactatga 250
gatacgtcag tatgttgtag aggtgatctt ctccgtgacg tttgcatttt 300
cttgaccat gtttgagctc atcatctttg aaatcttagg agtattgaat 350
agcagctccc gttattttca ctggaaaatg aacctgtgtg taattctgct 400
gatcctgggt ttcattggtg ctttttacct tggctatttt attgtgagca 450
atatccgact actgcataaa caacgactgc ttttttcctg tctcttatgg 500
ctgaccttta tgtatttctt ctggaaacta ggagatccct ttcccattct 550
cagcccaaaa catgggatct tatccataga acagctcatc agccgggttg 600
gtgtgattgg agtgactctc atggctcttc tttctggatt tgggtgctgc 650
aactgcccat acacttacat gtcttacttc ctcaggaatg tgactgacac 700
ggatattcta gccctggaac ggcgactgct gcaaaccatg gatatgatca 750
taagcaaaaa gaaaaggatg gcaatggcac ggagaacaat gttccagaag 800
ggggaagtgc ataacaaacc atcaggtttc tggggaatga taaaaagtgt 850
taccacttca gcatcaggaa gtgaaaatct tactcttatt caacaggaag 900
tggatgcttt ggaagaatta agcaggcagc tttttctgga aacagctgat 950
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cagttcaact tctatcaccg ttggtttgat gtgatcttcc tggtcagcgc 1450
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agcaaatggc accttgaact taagcctact acagactggt agaggccagt 1550
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cattttataa acaaacaaaa tgctatggta gcatttttca ccttcatagc 1650
atactccttc cccgtcaggt gatactatga ccatgagtag catcagccag 1700
aacatgagag ggagaactaa ctcaagacaa tactcagcag agagcatccc 1750
gtgtggatat gaggctggtg tagaggcgga gaggagccaa gaaactaaag 1800
gtgaaaaata cactggaact ctggggcaag acatgtctat ggtagctgag 1850
ccaaacacgt aggatttccg ttttaagggt cacatggaaa aggttatagc 1900
tttgccttga gattgactca ttaaaatcag agactgtaac aaaaaaaaaa 1950
aaaaaaaaaa agggcgggccg cgactctaga gtcgacctgc agaagcttgg 2000
ccgccatggc ccaacttggt tattgcagct tataatg 2037

<210> 430
<211> 455
<212> PRT
<213> Homo sapiens

<400> 430
Met Ser Phe Leu Ile Asp Ser Ser Ile Met Ile Thr Ser Gln Ile
1 5 10 15
Leu Phe Phe Gly Phe Gly Trp Leu Phe Phe Met Arg Gln Leu Phe
20 25 30
Lys Asp Tyr Glu Ile Arg Gln Tyr Val Val Gln Val Ile Phe Ser
35 40 45
Val Thr Phe Ala Phe Ser Cys Thr Met Phe Glu Leu Ile Ile Phe
50 55 60
Glu Ile Leu Gly Val Leu Asn Ser Ser Ser Arg Tyr Phe His Trp
65 70 75
Lys Met Asn Leu Cys Val Ile Leu Leu Ile Leu Val Phe Met Val
80 85 90
Pro Phe Tyr Ile Gly Tyr Phe Ile Val Ser Asn Ile Arg Leu Leu
95 100 105
His Lys Gln Arg Leu Leu Phe Ser Cys Leu Leu Trp Leu Thr Phe
110 115 120

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Met | Tyr | Phe | Phe | Trp | Lys | Leu | Gly | Asp | Pro | Phe | Pro | Ile | Leu | Ser | | 125 | 130 | 135 |
| Pro | Lys | His | Gly | Ile | Leu | Ser | Ile | Glu | Gln | Leu | Ile | Ser | Arg | Val | | 140 | 145 | 150 |
| Gly | Val | Ile | Gly | Val | Thr | Leu | Met | Ala | Leu | Leu | Ser | Gly | Phe | Gly | | 155 | 160 | 165 |
| Ala | Val | Asn | Cys | Pro | Tyr | Thr | Tyr | Met | Ser | Tyr | Phe | Leu | Arg | Asn | | 170 | 175 | 180 |
| Val | Thr | Asp | Thr | Asp | Ile | Leu | Ala | Leu | Glu | Arg | Arg | Leu | Leu | Gln | | 185 | 190 | 195 |
| Thr | Met | Asp | Met | Ile | Ile | Ser | Lys | Lys | Lys | Arg | Met | Ala | Met | Ala | | 200 | 205 | 210 |
| Arg | Arg | Thr | Met | Phe | Gln | Lys | Gly | Glu | Val | His | Asn | Lys | Pro | Ser | | 215 | 220 | 225 |
| Gly | Phe | Trp | Gly | Met | Ile | Lys | Ser | Val | Thr | Thr | Ser | Ala | Ser | Gly | | 230 | 235 | 240 |
| Ser | Glu | Asn | Leu | Thr | Leu | Ile | Gln | Gln | Glu | Val | Asp | Ala | Leu | Glu | | 245 | 250 | 255 |
| Glu | Leu | Ser | Arg | Gln | Leu | Phe | Leu | Glu | Thr | Ala | Asp | Leu | Tyr | Ala | | 260 | 265 | 270 |
| Thr | Lys | Glu | Arg | Ile | Glu | Tyr | Ser | Lys | Thr | Phe | Lys | Gly | Lys | Tyr | | 275 | 280 | 285 |
| Phe | Asn | Phe | Leu | Gly | Tyr | Phe | Phe | Ser | Ile | Tyr | Cys | Val | Trp | Lys | | 290 | 295 | 300 |
| Ile | Phe | Met | Ala | Thr | Ile | Asn | Ile | Val | Phe | Asp | Arg | Val | Gly | Lys | | 305 | 310 | 315 |
| Thr | Asp | Pro | Val | Thr | Arg | Gly | Ile | Glu | Ile | Thr | Val | Asn | Tyr | Leu | | 320 | 325 | 330 |
| Gly | Ile | Gln | Phe | Asp | Val | Lys | Phe | Trp | Ser | Gln | His | Ile | Ser | Phe | | 335 | 340 | 345 |
| Ile | Leu | Val | Gly | Ile | Ile | Ile | Val | Thr | Ser | Ile | Arg | Gly | Leu | Leu | | 350 | 355 | 360 |
| Ile | Thr | Leu | Thr | Lys | Phe | Phe | Tyr | Ala | Ile | Ser | Ser | Ser | Lys | Ser | | 365 | 370 | 375 |
| Ser | Asn | Val | Ile | Val | Leu | Leu | Leu | Ala | Gln | Ile | Met | Gly | Met | Tyr | | 380 | 385 | 390 |
| Phe | Val | Ser | Ser | Val | Leu | Leu | Ile | Arg | Met | Ser | Met | Pro | Leu | Glu | | 395 | 400 | 405 |
| Tyr | Arg | Thr | Ile | Ile | Thr | Glu | Val | Leu | Gly | Glu | Leu | Gln | Phe | Asn | | | | |

| | | |
|-------------------------------------|-------------------------|-----|
| 410 | 415 | 420 |
| Phe Tyr His Arg Trp Phe Asp Val Ile | Phe Leu Val Ser Ala Leu | |
| 425 | 430 | 435 |
| Ser Ser Ile Leu Phe Leu Tyr Leu Ala | His Lys Gln Ala Pro Glu | |
| 440 | 445 | 450 |
| Lys Gln Met Ala Pro | | |
| 455 | | |

<210> 431
 <211> 407
 <212> DNA
 <213> Homo sapiens
 <220>
 <221> unsure
 <222> 78, 81, 113, 157, 224, 297
 <223> unknown base

<400> 431
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 tcgactccag catcatgatt acctcccnga nactatTTTT tggatttggg 100
 tggcttttct tcngcgccaa tgtttaaaga ctatgagata cgtcagtatg 150
 ttgtacnggt gatcttctcc gtgacgtttg ccatttcttg caccatgttt 200
 gagctcatca tctttgaaat cttnngagta ttgaatagca gctcccgta 250
 ttttcactgg aaaatgaacc tgtgtgtaat tctgctgac ctggttntca 300
 tggcgccttt ttacattggc tattttattg tgagcaatat ccgactactg 350
 cataaacaac gactgctttt ttctgtctc ttatggctga cctttatgta 400
 tttccag 407

<210> 432
 <211> 457
 <212> DNA
 <213> Homo sapiens
 <220>
 <221> unsure
 <222> 31, 66, 81-82, 84, 122, 184, 187, 232, 241, 400, 424, 427, 434
 <223> unknown base

<400> 432
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 gccaaagggtt tctttnttga attccgggtt nngnatacct tcccagaaaa 100
 tatttttttg atttggggta gntttttttc atgcgccaat tgtttaaaga 150
 ctatgagata cgtcagtatg ttgtacaggt gatnttntcc gtgacgtttg 200

cattttcttg caccatgttt gagctcatca tntttgaaat nttaggagta 250
 ttgaatagca gctcccgtta ttttactgg aaaatgaacc tgtgtgtaat 300
 tctgctgata ctggttttca tgggtgccttt ttacattggc tattttattg 350
 tgagcaatat ccgactactg cataaacaac gactgctttt ttctgtctn 400
 ttatggctga cctttatgta tttntnttgg aaantaggag atccctttcc 450
 cattctc 457

<210> 433
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 433
 aagtggagcc ggagccttcc 20

<210> 434
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 434
 tcgttggtta tgcagtagtc gg 22

<210> 435
 <211> 41
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 435
 attgtttaaa gactatgaga tacgtcagta tgttgtacag g 41

<210> 436
 <211> 3951
 <212> DNA
 <213> Homo sapiens

<400> 436
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 gggcctccgg gatttgctac ctttttggct cctgtctcgt cgaactgctc 100
 ttctcacggg ctgtcgcctt caatctggac gtgatgggtg ccttgcgcaa 150
 ggagggcgag ccaggcagcc tcttcggctt ctctgtggcc ctgcaccggc 200

agttgcagcc cgcaccccag agctggctgc tggtaggtgc tccccaggcc 250
 ctggctcttc ctgggcagca ggcgaatcgc actggaggcc tcttcgcttg 300
 cccgttgagc ctggaggaga ctgactgcta cagagtggac atcgaccagg 350
 gagctgatat gcaaaaggaa agcaaggaga accagtgggtt gggagtcagt 400
 gttcggagcc aggggcctgg gggcaagatt gttacctgtg cacaccgata 450
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 gtcgctgctt tgtgctcagc caggacctgg ccatccggga tgagttggat 550
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 gtggagctct gtgcacaggg ctgagcggac ctggcacacc tggacgacgg 750
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 caagggtgct gtggtcatcc tgcgcaagga cagcgccagt cgcctggtgc 950
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 gccatgttcc agctccagga aaatgtcaaa gacaagcttc gggccattgt 1800
 agtgaccttg tcctacagtc tccagacccc tcggctccgg cgacaggctc 1850
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 agcaccacgc gggcagagat ccacttcctg aagcaaggct gtggtgaaga 1950
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 tcaggggtcc gggccctgga cctgcggag aagccactct gcctgtccaa 2250
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35 40 45
Gly Glu Pro Gly Ser Leu Phe Gly Phe Ser Val Ala Leu His Arg
50 55 60
Gln Leu Gln Pro Arg Pro Gln Ser Trp Leu Leu Val Gly Ala Pro
65 70 75
Gln Ala Leu Ala Leu Pro Gly Gln Gln Ala Asn Arg Thr Gly Gly

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| Leu | Phe | Ala | Cys | Pro | Leu | Ser | Leu | Glu | Glu | Thr | Asp | Cys | Tyr | Arg | | | | | |
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| Val | Asp | Ile | Asp | Gln | Gly | Ala | Asp | Met | Gln | Lys | Glu | Ser | Lys | Glu | | | | | |
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| Asn | Gln | Trp | Leu | Gly | Val | Ser | Val | Arg | Ser | Gln | Gly | Pro | Gly | Gly | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Lys | Ile | Val | Thr | Cys | Ala | His | Arg | Tyr | Glu | Ala | Arg | Gln | Arg | Val | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Asp | Gln | Ile | Leu | Glu | Thr | Arg | Asp | Met | Ile | Gly | Arg | Cys | Phe | Val | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Leu | Ser | Gln | Asp | Leu | Ala | Ile | Arg | Asp | Glu | Leu | Asp | Gly | Gly | Glu | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Trp | Lys | Phe | Cys | Glu | Gly | Arg | Pro | Gln | Gly | His | Glu | Gln | Phe | Gly | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Phe | Cys | Gln | Gln | Gly | Thr | Ala | Ala | Ala | Phe | Ser | Pro | Asp | Ser | His | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Tyr | Leu | Leu | Phe | Gly | Ala | Pro | Gly | Thr | Tyr | Asn | Trp | Lys | Gly | Thr | | | | | |
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| Ala | Arg | Val | Glu | Leu | Cys | Ala | Gln | Gly | Ser | Ala | Asp | Leu | Ala | His | | | | | |
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| Leu | Asp | Asp | Gly | Pro | Tyr | Glu | Ala | Gly | Gly | Glu | Lys | Glu | Gln | Asp | | | | | |
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| Val | Ala | Gly | Ala | Pro | Arg | Ala | Asn | His | Lys | Gly | Ala | Val | Val | Ile | | | | | |
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| Leu | Arg | Lys | Asp | Ser | Ala | Ser | Arg | Leu | Val | Pro | Glu | Val | Met | Leu | | | | | |
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| Ser | Gly | Glu | Arg | Leu | Thr | Ser | Gly | Phe | Gly | Tyr | Ser | Leu | Ala | Val | | | | | |
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| Val | Tyr | Leu | Asn | Gln | Gly | Gly | His | Trp | Ala | Gly | Ile | Ser | Pro | Leu | | | | | |
| | | | | 365 | | | | | 370 | | | | | 375 | | | | | |

| | | | |
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| Arg Leu Cys Gly Ser Pro Asp Ser Met Phe Gly Ile Ser Leu Ala | 380 | 385 | 390 |
| Val Leu Gly Asp Leu Asn Gln Asp Gly Phe Pro Asp Ile Ala Val | 395 | 400 | 405 |
| Gly Ala Pro Phe Asp Gly Asp Gly Lys Val Phe Ile Tyr His Gly | 410 | 415 | 420 |
| Ser Ser Leu Gly Val Val Ala Lys Pro Ser Gln Val Leu Glu Gly | 425 | 430 | 435 |
| Glu Ala Val Gly Ile Lys Ser Phe Gly Tyr Ser Leu Ser Gly Ser | 440 | 445 | 450 |
| Leu Asp Met Asp Gly Asn Gln Tyr Pro Asp Leu Leu Val Gly Ser | 455 | 460 | 465 |
| Leu Ala Asp Thr Ala Val Leu Phe Arg Ala Arg Pro Ile Leu His | 470 | 475 | 480 |
| Val Ser His Glu Val Ser Ile Ala Pro Arg Ser Ile Asp Leu Glu | 485 | 490 | 495 |
| Gln Pro Asn Cys Ala Gly Gly His Ser Val Cys Val Asp Leu Arg | 500 | 505 | 510 |
| Val Cys Phe Ser Tyr Ile Ala Val Pro Ser Ser Tyr Ser Pro Thr | 515 | 520 | 525 |
| Val Ala Leu Asp Tyr Val Leu Asp Ala Asp Thr Asp Arg Arg Leu | 530 | 535 | 540 |
| Arg Gly Gln Val Pro Arg Val Thr Phe Leu Ser Arg Asn Leu Glu | 545 | 550 | 555 |
| Glu Pro Lys His Gln Ala Ser Gly Thr Val Trp Leu Lys His Gln | 560 | 565 | 570 |
| His Asp Arg Val Cys Gly Asp Ala Met Phe Gln Leu Gln Glu Asn | 575 | 580 | 585 |
| Val Lys Asp Lys Leu Arg Ala Ile Val Val Thr Leu Ser Tyr Ser | 590 | 595 | 600 |
| Leu Gln Thr Pro Arg Leu Arg Arg Gln Ala Pro Gly Gln Gly Leu | 605 | 610 | 615 |
| Pro Pro Val Ala Pro Ile Leu Asn Ala His Gln Pro Ser Thr Gln | 620 | 625 | 630 |
| Arg Ala Glu Ile His Phe Leu Lys Gln Gly Cys Gly Glu Asp Lys | 635 | 640 | 645 |
| Ile Cys Gln Ser Asn Leu Gln Leu Val His Ala Arg Phe Cys Thr | 650 | 655 | 660 |
| Arg Val Ser Asp Thr Glu Phe Gln Pro Leu Pro Met Asp Val Asp | | | |

| 665 | | | | | 670 | | | | | 675 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Thr | Thr | Ala | Leu | Phe | Ala | Leu | Ser | Gly | Gln | Pro | Val | Ile | Gly |
| | | | | 680 | | | | | 685 | | | | | 690 |
| Leu | Glu | Leu | Met | Val | Thr | Asn | Leu | Pro | Ser | Asp | Pro | Ala | Gln | Pro |
| | | | | 695 | | | | | 700 | | | | | 705 |
| Gln | Ala | Asp | Gly | Asp | Asp | Ala | His | Glu | Ala | Gln | Leu | Leu | Val | Met |
| | | | | 710 | | | | | 715 | | | | | 720 |
| Leu | Pro | Asp | Ser | Leu | His | Tyr | Ser | Gly | Val | Arg | Ala | Leu | Asp | Pro |
| | | | | 725 | | | | | 730 | | | | | 735 |
| Ala | Glu | Lys | Pro | Leu | Cys | Leu | Ser | Asn | Glu | Asn | Ala | Ser | His | Val |
| | | | | 740 | | | | | 745 | | | | | 750 |
| Glu | Cys | Glu | Leu | Gly | Asn | Pro | Met | Lys | Arg | Gly | Ala | Gln | Val | Thr |
| | | | | 755 | | | | | 760 | | | | | 765 |
| Phe | Tyr | Leu | Ile | Leu | Ser | Thr | Ser | Gly | Ile | Ser | Ile | Glu | Thr | Thr |
| | | | | 770 | | | | | 775 | | | | | 780 |
| Glu | Leu | Glu | Val | Glu | Leu | Leu | Leu | Ala | Thr | Ile | Ser | Glu | Gln | Glu |
| | | | | 785 | | | | | 790 | | | | | 795 |
| Leu | His | Pro | Val | Ser | Ala | Arg | Ala | Arg | Val | Phe | Ile | Glu | Leu | Pro |
| | | | | 800 | | | | | 805 | | | | | 810 |
| Leu | Ser | Ile | Ala | Gly | Met | Ala | Ile | Pro | Gln | Gln | Leu | Phe | Phe | Ser |
| | | | | 815 | | | | | 820 | | | | | 825 |
| Gly | Val | Val | Arg | Gly | Glu | Arg | Ala | Met | Gln | Ser | Glu | Arg | Asp | Val |
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| Gly | Ser | Lys | Val | Lys | Tyr | Glu | Val | Thr | Val | Ser | Asn | Gln | Gly | Gln |
| | | | | 845 | | | | | 850 | | | | | 855 |
| Ser | Leu | Arg | Thr | Leu | Gly | Ser | Ala | Phe | Leu | Asn | Ile | Met | Trp | Pro |
| | | | | 860 | | | | | 865 | | | | | 870 |
| His | Glu | Ile | Ala | Asn | Gly | Lys | Trp | Leu | Leu | Tyr | Pro | Met | Gln | Val |
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| Glu | Leu | Glu | Gly | Gly | Gln | Gly | Pro | Gly | Gln | Lys | Gly | Leu | Cys | Ser |
| | | | | 890 | | | | | 895 | | | | | 900 |
| Pro | Arg | Pro | Asn | Ile | Leu | His | Leu | Asp | Val | Asp | Ser | Arg | Asp | Arg |
| | | | | 905 | | | | | 910 | | | | | 915 |
| Arg | Arg | Arg | Glu | Leu | Glu | Pro | Pro | Glu | Gln | Gln | Glu | Pro | Gly | Glu |
| | | | | 920 | | | | | 925 | | | | | 930 |
| Arg | Gln | Glu | Pro | Ser | Met | Ser | Trp | Trp | Pro | Val | Ser | Ser | Ala | Glu |
| | | | | 935 | | | | | 940 | | | | | 945 |
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Thr Thr Ile Ser Gln Tyr Asp Lys Glu Val Gly Gln Trp Asn Lys

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| Phe | Arg | Asp | Glu | Val | Glu | Asp | Asp | Tyr | Phe | Arg | Thr | Trp | Ser | Pro | | | | | |
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| Gly | Lys | Pro | Phe | Asp | Gln | Ala | Leu | Asp | Pro | Ala | Lys | Asp | Pro | Cys | | | | | |
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| Leu | Lys | Met | Lys | Cys | Ser | Arg | His | Lys | Val | Cys | Ile | Ala | Gln | Asp | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Ser | Gln | Thr | Ala | Val | Cys | Ile | Ser | His | Arg | Arg | Leu | Thr | His | Arg | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Met | Lys | Glu | Ala | Gly | Val | Asp | His | Arg | Gln | Trp | Arg | Gly | Pro | Ile | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Leu | Ser | Thr | Cys | Lys | Gln | Cys | Pro | Val | Val | Tyr | Pro | Ser | Pro | Val | | | | | |
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| Cys | Gly | Ser | Asp | Gly | His | Thr | Tyr | Ser | Phe | Gln | Cys | Lys | Leu | Glu | | | | | |
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| Tyr | Gln | Ala | Cys | Val | Leu | Gly | Lys | Gln | Ile | Ser | Val | Lys | Cys | Glu | | | | | |
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| Gly | His | Cys | Pro | Cys | Pro | Ser | Asp | Lys | Pro | Thr | Ser | Thr | Ser | Arg | | | | | |
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| Asn | Val | Lys | Arg | Ala | Cys | Ser | Asp | Leu | Glu | Phe | Arg | Glu | Val | Ala | | | | | |
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| Asn | Arg | Leu | Arg | Asp | Trp | Phe | Lys | Ala | Leu | His | Glu | Ser | Gly | Ser | | | | | |
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| Gln | Asn | Lys | Lys | Thr | Lys | Thr | Leu | Leu | Arg | Pro | Glu | Arg | Ser | Arg | | | | | |
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| Phe | Asp | Thr | Ser | Ile | Leu | Pro | Ile | Cys | Lys | Asp | Ser | Leu | Gly | Trp | | | | | |
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| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Lys | Ala | Phe | Phe | Asn | Ser | Cys | Asp | Thr | Tyr | Lys | Asp | Ser | Leu | Ile | | | | | |
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| Ser | Asn | Asn | Glu | Trp | Cys | Tyr | Cys | Phe | Gln | Arg | Gln | Gln | Asp | Pro | | | | | |
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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
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| Ala | Ser | Gly | Asp | Phe | His | Glu | Trp | Thr | Asp | Asp | Glu | Asp | Asp | Glu |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Asp | Asp | Ile | Met | Asn | Asp | Glu | Asp | Glu | Ile | Glu | Asp | Asp | Asp | Glu |
| | | | | 410 | | | | | 415 | | | | | 420 |
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 acatgtatga tttgtgccac tgatcttaaa cctatgattc agtaacttct 2900

| | | | | | |
|-----------------|---------------------|-------------------------|-----|--|-----|
| | 110 | | 115 | | 120 |
| Phe Phe Glu Leu | Ile Leu Asp Asn Met | Gly Glu Gln Ala Gln Glu | | | |
| | 125 | | 130 | | 135 |
| Gln Glu Asp Trp | Lys Lys Tyr Ile Thr | Gly Thr Asp Ile Leu Asp | | | |
| | 140 | | 145 | | 150 |
| Met Lys Leu Glu | Asp Ile Leu Glu Ser | Ile Asn Ser Ile Lys Ser | | | |
| | 155 | | 160 | | 165 |
| Arg Leu Ser Lys | Ser Gly His Ile Gln | Ile Leu Leu Arg Ala Phe | | | |
| | 170 | | 175 | | 180 |
| Glu Ala Arg Asp | Arg Asn Ile Gln Glu | Ser Asn Phe Asp Arg Val | | | |
| | 185 | | 190 | | 195 |
| Asn Phe Trp Ser | Met Val Asn Leu Val | Val Met Val Val Val Ser | | | |
| | 200 | | 205 | | 210 |
| Ala Ile Gln Val | Tyr Met Leu Lys Ser | Leu Phe Glu Asp Lys Arg | | | |
| | 215 | | 220 | | 225 |
| Lys Ser Arg Thr | | | | | |

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 <223> Synthetic oligonucleotide probe

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<210> 449
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 449
 gtcttccagt ttcatatcca ata 23

<210> 450
 <211> 43
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<220>
 <223> Synthetic oligonucleotide probe

<400> 450
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| Trp Met Asp Ala Asp Leu Ala Cys Gln Lys Arg Pro Ser Gly Lys | 65 | | 70 | | 75 |
| Leu Val Ser Val Leu Ser Gly Ala Glu Gly Ser Phe Val Ser Ser | 80 | | 85 | | 90 |
| Leu Val Arg Ser Ile Ser Asn Ser Tyr Ser Tyr Ile Trp Ile Gly | 95 | | 100 | | 105 |
| Leu His Asp Pro Thr Gln Gly Ser Glu Pro Asp Gly Asp Gly Trp | 110 | | 115 | | 120 |
| Glu Trp Ser Ser Thr Asp Val Met Asn Tyr Phe Ala Trp Glu Lys | 125 | | 130 | | 135 |
| Asn Pro Ser Thr Ile Leu Asn Pro Gly His Cys Gly Ser Leu Ser | 140 | | 145 | | 150 |
| Arg Ser Thr Gly Phe Leu Lys Trp Lys Asp Tyr Asn Cys Asp Ala | 155 | | 160 | | 165 |
| Lys Leu Pro Tyr Val Cys Lys Phe Lys Asp | 170 | | 175 | | |

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 <213> Homo sapiens

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 ggcgctcctg gcgctggtgc tggctgcctg cggagagctg gcgcccggccc 150
 tgcgctgcta cgtctgtccg gagcccacag gagtgtcgga ctgtgtcacc 200
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 <213> Homo sapiens

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 <213> Homo sapiens

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 Ala Thr Leu Asn Ser Val Leu Asn Ser Asn Ala Ile Lys Asn Leu
 35 40 45
 Pro Pro Pro Leu Gly Gly Ala Ala Gly His Pro Gly Ser Ala Val
 50 55 60
 Ser Ala Ala Pro Gly Ile Leu Tyr Pro Gly Gly Asn Lys Tyr Gln
 65 70 75

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 gggtttgagg atgggggagt agctacagga agcgaccccg cgatggcaag 200
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| | 200 | 205 | 210 |
|-----------------|---------------------|---------------------|-----|
| Met Ala Pro Val | Lys Tyr His Gly Asp | Arg Ser Lys Glu Ser | Leu |
| | 215 | 220 | 225 |
| Val Ser Phe Ala | Met Gln His Val Arg | Ser Thr Val Thr Glu | Leu |
| | 230 | 235 | 240 |
| Trp Thr Gly Asn | Phe Val Asn Ser Ile | Gln Thr Ala Phe Ala | Ala |
| | 245 | 250 | 255 |
| Gly Ile Gly Trp | Leu Ile Thr Phe Cys | Ser Lys Gly Gly Asp | Cys |
| | 260 | 265 | 270 |
| Leu Thr Ser Gln | Thr Arg Leu Arg Leu | Ser Gly Met Leu Phe | Leu |
| | 275 | 280 | 285 |
| Asn Ser Leu Asp | Ala Lys Glu Ile Tyr | Leu Glu Val Ile His | Asn |
| | 290 | 295 | 300 |
| Leu Pro Asp Phe | Glu Leu Leu Ser Ala | Asn Thr Leu Glu Asp | Arg |
| | 305 | 310 | 315 |
| Leu Ala His His | Arg Trp Leu Leu Phe | Phe His Phe Gly Lys | Asn |
| | 320 | 325 | 330 |
| Glu Asn Ser Asn | Asp Pro Glu Leu Lys | Lys Leu Lys Thr Leu | Leu |
| | 335 | 340 | 345 |
| Lys Asn Asp His | Ile Gln Val Gly Arg | Phe Asp Cys Ser Ser | Ala |
| | 350 | 355 | 360 |
| Pro Asp Ile Cys | Ser Asn Leu Tyr Val | Phe Gln Pro Ser Leu | Ala |
| | 365 | 370 | 375 |
| Val Phe Lys Gly | Gln Gly Thr Lys Glu | Tyr Glu Ile His His | Gly |
| | 380 | 385 | 390 |
| Lys Lys Ile Leu | Tyr Asp Ile Leu Ala | Phe Ala Lys Glu Ser | Val |
| | 395 | 400 | 405 |
| Asn Ser His Val | Thr Thr Leu Gly Pro | Gln Asn Phe Pro Ala | Asn |
| | 410 | 415 | 420 |
| Asp Lys Glu Pro | Trp Leu Val Asp Phe | Phe Ala Pro Trp Cys | Pro |
| | 425 | 430 | 435 |
| Pro Cys Arg Ala | Leu Leu Pro Glu Leu | Arg Arg Ala Ser Asn | Leu |
| | 440 | 445 | 450 |
| Leu Tyr Gly Gln | Leu Lys Phe Gly Thr | Leu Asp Cys Thr Val | His |
| | 455 | 460 | 465 |
| Glu Gly Leu Cys | Asn Met Tyr Asn Ile | Gln Ala Tyr Pro Thr | Thr |
| | 470 | 475 | 480 |
| Val Val Phe Asn | Gln Ser Asn Ile His | Glu Tyr Glu Gly His | His |
| | 485 | 490 | 495 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ser | Ala | Glu | Gln | Ile | Leu | Glu | Phe | Ile | Glu | Asp | Leu | Met | Asn | Pro | |
| | | | | 500 | | | | | 505 | | | | | 510 | |
| Ser | Val | Val | Ser | Leu | Thr | Pro | Thr | Thr | Phe | Asn | Glu | Leu | Val | Thr | |
| | | | | 515 | | | | | 520 | | | | | 525 | |
| Gln | Arg | Lys | His | Asn | Glu | Val | Trp | Met | Val | Asp | Phe | Tyr | Ser | Pro | |
| | | | | 530 | | | | | 535 | | | | | 540 | |
| Trp | Cys | His | Pro | Cys | Gln | Val | Leu | Met | Pro | Glu | Trp | Lys | Arg | Met | |
| | | | | 545 | | | | | 550 | | | | | 555 | |
| Ala | Arg | Thr | Leu | Thr | Gly | Leu | Ile | Asn | Val | Gly | Ser | Ile | Asp | Cys | |
| | | | | 560 | | | | | 565 | | | | | 570 | |
| Gln | Gln | Tyr | His | Ser | Phe | Cys | Ala | Gln | Glu | Asn | Val | Gln | Arg | Tyr | |
| | | | | 575 | | | | | 580 | | | | | 585 | |
| Pro | Glu | Ile | Arg | Phe | Phe | Pro | Pro | Lys | Ser | Asn | Lys | Ala | Tyr | Gln | |
| | | | | 590 | | | | | 595 | | | | | 600 | |
| Tyr | His | Ser | Tyr | Asn | Gly | Trp | Asn | Arg | Asp | Ala | Tyr | Ser | Leu | Arg | |
| | | | | 605 | | | | | 610 | | | | | 615 | |
| Ile | Trp | Gly | Leu | Gly | Phe | Leu | Pro | Gln | Val | Ser | Thr | Asp | Leu | Thr | |
| | | | | 620 | | | | | 625 | | | | | 630 | |
| Pro | Gln | Thr | Phe | Ser | Glu | Lys | Val | Leu | Gln | Gly | Lys | Asn | His | Trp | |
| | | | | 635 | | | | | 640 | | | | | 645 | |
| Val | Ile | Asp | Phe | Tyr | Ala | Pro | Trp | Cys | Gly | Pro | Cys | Gln | Asn | Phe | |
| | | | | 650 | | | | | 655 | | | | | 660 | |
| Ala | Pro | Glu | Phe | Glu | Leu | Leu | Ala | Arg | Met | Ile | Lys | Gly | Lys | Val | |
| | | | | 665 | | | | | 670 | | | | | 675 | |
| Lys | Ala | Gly | Lys | Val | Asp | Cys | Gln | Ala | Tyr | Ala | Gln | Thr | Cys | Gln | |
| | | | | 680 | | | | | 685 | | | | | 690 | |
| Lys | Ala | Gly | Ile | Arg | Ala | Tyr | Pro | Thr | Val | Lys | Phe | Tyr | Phe | Tyr | |
| | | | | 695 | | | | | 700 | | | | | 705 | |
| Glu | Arg | Ala | Lys | Arg | Asn | Phe | Gln | Glu | Glu | Gln | Ile | Asn | Thr | Arg | |
| | | | | 710 | | | | | 715 | | | | | 720 | |
| Asp | Ala | Lys | Ala | Ile | Ala | Ala | Leu | Ile | Ser | Glu | Lys | Leu | Glu | Thr | |
| | | | | 725 | | | | | 730 | | | | | 735 | |
| Leu | Arg | Asn | Gln | Gly | Lys | Arg | Asn | Lys | Asp | Glu | Leu | | | | |
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 <223> Synthetic oligonucleotide probe

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<210> 461

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 461

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<210> 462

<211> 50

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<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 462

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<210> 463

<211> 1818

<212> DNA

<213> Homo sapiens

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aacagagaag agatctatcg ctctctaaat caggtgaaga aagaagtggg 400

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cacagaggtc tgacatcaga acttcaggcc ttgggaaaaa ctggtatcaa 700

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Arg | Lys | Ser | Val | Ala | Gly | Glu | Ile | Val | Leu | Ile | Thr | Gly | Ala | Gly | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| His | Gly | Ile | Gly | Arg | Gln | Thr | Thr | Tyr | Glu | Phe | Ala | Lys | Arg | Gln | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Ser | Ile | Leu | Val | Leu | Trp | Asp | Ile | Asn | Lys | Arg | Gly | Val | Glu | Glu | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Thr | Ala | Ala | Glu | Cys | Arg | Lys | Leu | Gly | Val | Thr | Ala | His | Ala | Tyr | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Val | Val | Asp | Cys | Ser | Asn | Arg | Glu | Glu | Ile | Tyr | Arg | Ser | Leu | Asn | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Gln | Val | Lys | Lys | Glu | Val | Gly | Asp | Val | Thr | Ile | Val | Val | Asn | Asn | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Ala | Gly | Thr | Val | Tyr | Pro | Ala | Asp | Leu | Leu | Ser | Thr | Lys | Asp | Glu | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Glu | Ile | Thr | Lys | Thr | Phe | Glu | Val | Asn | Ile | Leu | Gly | His | Phe | Trp | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Ile | Thr | Lys | Ala | Leu | Leu | Pro | Ser | Met | Met | Glu | Arg | Asn | His | Gly | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| His | Ile | Val | Thr | Val | Ala | Ser | Val | Cys | Gly | His | Glu | Gly | Ile | Pro | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Tyr | Leu | Ile | Pro | Tyr | Cys | Ser | Ser | Lys | Phe | Ala | Ala | Val | Gly | Phe | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| His | Arg | Gly | Leu | Thr | Ser | Glu | Leu | Gln | Ala | Leu | Gly | Lys | Thr | Gly | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ile | Lys | Thr | Ser | Cys | Leu | Cys | Pro | Val | Phe | Val | Asn | Thr | Gly | Phe | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Thr | Lys | Asn | Pro | Ser | Thr | Arg | Leu | Trp | Pro | Val | Leu | Glu | Thr | Asp | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Glu | Val | Val | Arg | Ser | Leu | Ile | Asp | Gly | Ile | Leu | Thr | Asn | Lys | Lys | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Met | Ile | Phe | Val | Pro | Ser | Tyr | Ile | Asn | Ile | Phe | Leu | Arg | Leu | Gln | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Lys | Phe | Leu | Pro | Glu | Arg | Ala | Ser | Ala | Ile | Leu | Asn | Arg | Met | Gln | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Asn | Ile | Gln | Phe | Glu | Ala | Val | Val | Gly | His | Lys | Ile | Lys | Met | Lys | |
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<210> 465
 <211> 1547
 <212> DNA
 <213> Homo sapiens

<400> 465

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<210> 466

<211> 414

<212> PRT

<213> Homo sapiens

<400> 466

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Gly Pro Pro Leu Pro Thr Pro Gly Pro Asp Arg Asp Arg Glu Leu
50 55 60

Thr Ala Asp Ser Asp Val Asp Glu Phe Leu Asp Lys Phe Leu Ser
65 70 75

Ala Gly Val Lys Gln Ser Asp Leu Pro Arg Lys Glu Thr Glu Gln
80 85 90

Pro Pro Ala Pro Gly Ser Met Glu Glu Ser Val Arg Gly Tyr Asp
95 100 105

Trp Ser Pro Arg Asp Ala Arg Arg Ser Pro Asp Gln Gly Arg Gln
110 115 120

Gln Ala Glu Arg Arg Ser Val Leu Arg Gly Phe Cys Ala Asn Ser
125 130 135

Ser Leu Ala Phe Pro Thr Lys Glu Arg Ala Phe Asp Asp Ile Pro
140 145 150

Asn Ser Glu Leu Ser His Leu Ile Val Asp Asp Arg His Gly Ala
155 160 165

Ile Tyr Cys Tyr Val Pro Lys Val Ala Cys Thr Asn Trp Lys Arg
170 175 180

Val Met Ile Val Leu Ser Gly Ser Leu Leu His Arg Gly Ala Pro
185 190 195

Tyr Arg Asp Pro Leu Arg Ile Pro Arg Glu His Val His Asn Ala
200 205 210

Ser Ala His Leu Thr Phe Asn Lys Phe Trp Arg Arg Tyr Gly Lys
215 220 225

Leu Ser Arg His Leu Met Lys Val Lys Leu Lys Lys Tyr Thr Lys
230 235 240

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<210> 468

<211> 270

<212> PRT

<213> Homo sapiens

<400> 468

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| Met | Ala | Thr | Gly | Thr | Arg | Tyr | Ala | Gly | Lys | Val | Val | Val | Val | Thr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gly | Gly | Gly | Arg | Gly | Ile | Gly | Ala | Gly | Ile | Val | Arg | Ala | Phe | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Asn | Ser | Gly | Ala | Arg | Val | Val | Ile | Cys | Asp | Lys | Asp | Glu | Ser | Gly |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Gly | Arg | Ala | Leu | Glu | Gln | Glu | Leu | Pro | Gly | Ala | Val | Phe | Ile | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Cys | Asp | Val | Thr | Gln | Glu | Asp | Asp | Val | Lys | Thr | Leu | Val | Ser | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Thr | Ile | Arg | Arg | Phe | Gly | Arg | Leu | Asp | Cys | Val | Val | Asn | Asn | Ala |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gly | His | His | Pro | Pro | Pro | Gln | Arg | Pro | Glu | Glu | Thr | Ser | Ala | Gln |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gly | Phe | Arg | Gln | Leu | Leu | Glu | Leu | Asn | Leu | Leu | Gly | Thr | Tyr | Thr |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Thr | Lys | Leu | Ala | Leu | Pro | Tyr | Leu | Arg | Lys | Ser | Gln | Gly | Asn | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Val | Ile | Asn | Ile | Ser | Ser | Leu | Val | Gly | Ala | Ile | Gly | Gln | Ala | Gln | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Ala | Val | Pro | Tyr | Val | Ala | Thr | Lys | Gly | Ala | Val | Thr | Ala | Met | Thr | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Lys | Ala | Leu | Ala | Leu | Asp | Glu | Ser | Pro | Tyr | Gly | Val | Arg | Val | Asn | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Cys | Ile | Ser | Pro | Gly | Asn | Ile | Trp | Thr | Pro | Leu | Trp | Glu | Glu | Leu | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ala | Ala | Leu | Met | Pro | Asp | Pro | Arg | Ala | Thr | Ile | Arg | Glu | Gly | Met | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Leu | Ala | Gln | Pro | Leu | Gly | Arg | Met | Gly | Gln | Pro | Ala | Glu | Val | Gly | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ala | Ala | Ala | Val | Phe | Leu | Ala | Ser | Glu | Ala | Asn | Phe | Cys | Thr | Gly | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Ile | Glu | Leu | Leu | Val | Thr | Gly | Gly | Ala | Glu | Leu | Gly | Tyr | Gly | Cys | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Lys | Ala | Ser | Arg | Ser | Thr | Pro | Val | Asp | Ala | Pro | Asp | Ile | Pro | Ser | |
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<210> 469
 <211> 687
 <212> DNA
 <213> Homo sapiens

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 ccagcccagg agccccaaaa gcaagaggaa ggggcaaggg cggcctgggc 150
 ccctggcccc tggccctcac caggtgccac tggacctggt gtcacggatg 200
 aaaccgtatg cccgcatgga ggagtatgag aggaacatcg aggagatggt 250
 ggcccagctg aggaacagct cagagctggc ccagagaaag tgtgaggtca 300
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 agcatcaacc acgaccccag ccgtatcccc gtggacctgc cggaggcacg 400
 gtgcctgtgt ctgggctgtg tgaaccctt caccatgcag gaggaccgca 450
 gcatggtgag cgtgccggtg ttcagccagg ttcctgtgag ccgccgctc 500
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gaccatcgct gtgggctgca cctgcatctt ctgaatcacc tggcccagaa 600
gccaggccag cagcccgaga ccacccctct tgcaacctttg tgccaagaaa 650
ggcctatgaa aagtaaacac tgacttttga aagcaag 687

<210> 470
<211> 180
<212> PRT
<213> Homo sapiens

<400> 470
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35 40 45
Pro Leu Asp Leu Val Ser Arg Met Lys Pro Tyr Ala Arg Met Glu
50 55 60
Glu Tyr Glu Arg Asn Ile Glu Glu Met Val Ala Gln Leu Arg Asn
65 70 75
Ser Ser Glu Leu Ala Gln Arg Lys Cys Glu Val Asn Leu Gln Leu
80 85 90
Trp Met Ser Asn Lys Arg Ser Leu Ser Pro Trp Gly Tyr Ser Ile
95 100 105
Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu Pro Glu Ala Arg
110 115 120
Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr Met Gln Glu Asp
125 130 135
Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val Pro Val Arg
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Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys Arg Gln
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Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile Phe
170 175 180

<210> 471
<211> 2368
<212> DNA
<213> Homo sapiens

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aaaccggcgg ggcgagcgag gctgcggggc ggccgctgcc cttccccaca 100

| | | | | | |
|-------------|------------|-------------|-------------|-------------|------|
| ctccccgccg | agaagcctcg | ctcggcgcgc | aacatggcgg | gtgggcgctg | 150 |
| cgccccgcag | ctaacggcgc | tcctggccgc | ctggatcgcg | gctgtggcgg | 200 |
| cgacggcagg | ccccgaggag | gccgcgctgc | cgccggagca | gagccgggtc | 250 |
| cagcccatga | ccgcctccaa | ctggacgctg | gtgatggagg | gcgagtggat | 300 |
| gctgaaatth | tacgccccat | ggtgtccatc | ctgccagcag | actgattcag | 350 |
| aatgggaggc | ttttgcaaag | aatggtgaaa | tacttcagat | cagtgtgggg | 400 |
| aaggtagatg | tcattcaaga | accaggthttg | agtggccgct | tcctttgtcac | 450 |
| cactctccca | gcattttttc | atgcaaagga | tgggatattc | cgccgtttatc | 500 |
| gtggcccagg | aatcttcgaa | gacctgcaga | attatatctt | agagaagaaa | 550 |
| tggcaatcag | tcgagcctct | gactggctgg | aaatccccag | cttctctaac | 600 |
| gatgtctgga | atggctggtc | tttttagcat | ctctggcaag | atatggcatc | 650 |
| ttcacaaacta | tttcacagtg | actcttgga | ttcctgcttg | gtgttcttat | 700 |
| gtgtttttcg | tcatagccac | cttggttttt | ggccttttta | tgggtctgggt | 750 |
| cttggtggta | atatcagaat | gtttctatgt | gccacttcca | aggcatttat | 800 |
| ctgagcgttc | tgagcagaat | cggagatcag | aggaggctca | tagagctgaa | 850 |
| cagttgcagg | atgcggagga | ggaaaaagat | gattcaaattg | aagaagaaaa | 900 |
| caaagacagc | cttgtagatg | atgaagaaga | gaaagaagat | cttggcgatg | 950 |
| aggatgaagc | agaggaagaa | gaggaggagg | acaacttggc | tgtcgggtgtg | 1000 |
| gatgaggaga | gaagtgaggc | caatgatcag | gggccccag | gagaggacgg | 1050 |
| tgtgaccggg | gaggaagtag | agcctgagga | ggctgaagaa | ggcatctctg | 1100 |
| agcaaccctg | cccagctgac | acagagggtg | tggaagactc | cttgaggcag | 1150 |
| cgtaaaagtc | agcatgctga | caagggactg | tagatttaat | gatgcgtttt | 1200 |
| caagaataca | cacaaaaaca | atatgtcagc | ttcccttttg | cctgcagttt | 1250 |
| gtaccaaattc | cttaattttt | cctgaatgag | caagcttctc | ttaaaagatg | 1300 |
| ctctctagtc | atttggtctc | atggcagtaa | gcctcatgta | tactaaggag | 1350 |
| agtcttccag | gtgtgacaat | caggatatag | aaaaacaaac | gtagtgttgg | 1400 |
| gatctgtttg | gagactggga | tgggaacaag | ttcatttact | taggggtcag | 1450 |
| agagtctcga | ccagaggagg | ccattcccag | tcctaattcag | caccttccag | 1500 |
| agacaaggct | gcaggccctg | tgaatatgaaa | gccaaagcag | agccttggct | 1550 |

| | | | | | | | | | | | | | | | | | |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Asp | Val | Ile | Gln | Glu | Pro | Gly | Leu | Ser | Gly | Arg | Phe | Phe | Val | 95 | 100 | 105 |
| Thr | Thr | Leu | Pro | Ala | Phe | Phe | His | Ala | Lys | Asp | Gly | Ile | Phe | Arg | 110 | 115 | 120 |
| Arg | Tyr | Arg | Gly | Pro | Gly | Ile | Phe | Glu | Asp | Leu | Gln | Asn | Tyr | Ile | 125 | 130 | 135 |
| Leu | Glu | Lys | Lys | Trp | Gln | Ser | Val | Glu | Pro | Leu | Thr | Gly | Trp | Lys | 140 | 145 | 150 |
| Ser | Pro | Ala | Ser | Leu | Thr | Met | Ser | Gly | Met | Ala | Gly | Leu | Phe | Ser | 155 | 160 | 165 |
| Ile | Ser | Gly | Lys | Ile | Trp | His | Leu | His | Asn | Tyr | Phe | Thr | Val | Thr | 170 | 175 | 180 |
| Leu | Gly | Ile | Pro | Ala | Trp | Cys | Ser | Tyr | Val | Phe | Phe | Val | Ile | Ala | 185 | 190 | 195 |
| Thr | Leu | Val | Phe | Gly | Leu | Phe | Met | Gly | Leu | Val | Leu | Val | Val | Ile | 200 | 205 | 210 |
| Ser | Glu | Cys | Phe | Tyr | Val | Pro | Leu | Pro | Arg | His | Leu | Ser | Glu | Arg | 215 | 220 | 225 |
| Ser | Glu | Gln | Asn | Arg | Arg | Ser | Glu | Glu | Ala | His | Arg | Ala | Glu | Gln | 230 | 235 | 240 |
| Leu | Gln | Asp | Ala | Glu | Glu | Glu | Lys | Asp | Asp | Ser | Asn | Glu | Glu | Glu | 245 | 250 | 255 |
| Asn | Lys | Asp | Ser | Leu | Val | Asp | Asp | Glu | Glu | Glu | Lys | Glu | Asp | Leu | 260 | 265 | 270 |
| Gly | Asp | Glu | Asp | Glu | Ala | Glu | Glu | Glu | Glu | Glu | Glu | Asp | Asn | Leu | 275 | 280 | 285 |
| Ala | Ala | Gly | Val | Asp | Glu | Glu | Arg | Ser | Glu | Ala | Asn | Asp | Gln | Gly | 290 | 295 | 300 |
| Pro | Pro | Gly | Glu | Asp | Gly | Val | Thr | Arg | Glu | Glu | Val | Glu | Pro | Glu | 305 | 310 | 315 |
| Glu | Ala | Glu | Glu | Gly | Ile | Ser | Glu | Gln | Pro | Cys | Pro | Ala | Asp | Thr | 320 | 325 | 330 |
| Glu | Val | Val | Glu | Asp | Ser | Leu | Arg | Gln | Arg | Lys | Ser | Gln | His | Ala | 335 | 340 | 345 |
| Asp Lys Gly Leu | | | | | | | | | | | | | | | | | |

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 <213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

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<210> 474
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 474
ctctctcat ccacaccagc agcc 24

<210> 475
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 475
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<210> 476
<211> 2478
<212> DNA
<213> Homo sapiens

<400> 476
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tcaagaacaa tggaatatca tcctgattta gaaaatttgg atgaagatgg 200
atatactcaa ttacacttcg actctcaaag caataccagg atagctgttg 250
tttcagagaa aggatcgtgt gctgcatctc ctccttggcg cctcattgct 300
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tacataaaaa tacataaaat ctgatgatga atataaaaaa gtaaccaacc 2100
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<213> Homo sapiens

<400> 477
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35 40 45
Ile Ala Val Ile Leu Gly Ile Leu Cys Leu Val Ile Leu Val Ile
50 55 60
Ala Val Val Leu Gly Thr Met Gly Val Leu Ser Ser Pro Cys Pro
65 70 75
Pro Asn Trp Ile Ile Tyr Glu Lys Ser Cys Tyr Leu Phe Ser Met
80 85 90
Ser Leu Asn Ser Trp Asp Gly Ser Lys Arg Gln Cys Trp Gln Leu
95 100 105
Gly Ser Asn Leu Leu Lys Ile Asp Ser Ser Asn Glu Leu Gly Phe
110 115 120
Ile Val Lys Gln Val Ser Ser Gln Pro Asp Asn Ser Phe Trp Ile
125 130 135
Gly Leu Ser Arg Pro Gln Thr Glu Val Pro Trp Leu Trp Glu Asp
140 145 150
Gly Ser Thr Phe Ser Ser Asn Leu Phe Gln Ile Arg Thr Thr Ala
155 160 165
Thr Gln Glu Asn Pro Ser Pro Asn Cys Val Trp Ile His Val Ser

| | | | | | |
|-------------------------------------|-------------------------|--|-----|-----|-----|
| | 170 | | 175 | | 180 |
| Val Ile Tyr Asp Gln Leu Cys Ser Val | Pro Ser Tyr Ser Ile Cys | | | | |
| 185' | 190 | | | 195 | |
| Glu Lys Lys Phe Ser Met | | | | | |
| 200 | | | | | |

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 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 478
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<210> 479
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 <212> DNA
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<220>
 <223> Synthetic oligonucleotide probe

<400> 479
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<210> 480
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 480
 atcctcccag agccatggta cctc 24

<210> 481
 <211> 51
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

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<210> 482
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 <212> DNA
 <213> Homo sapiens

341

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 <211> 693
 <212> PRT
 <213> Homo sapiens

<400> 483
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 20 25 30
 Asp Phe Arg Phe Cys Ser Gln Arg Asn Gln Thr His Arg Ser Ser
 35 40 45
 Leu His Tyr Lys Pro Thr Pro Asp Leu Arg Ile Ser Ile Glu Asn
 50 55 60
 Ser Glu Glu Ala Leu Thr Val His Ala Pro Phe Pro Ala Ala His
 65 70 75

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Pro | Ala | Ser | Arg | Ser | Phe | Pro | Asp | Pro | Arg | Gly | Leu | Tyr | His | Phe | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Cys | Leu | Tyr | Trp | Asn | Arg | His | Ala | Gly | Arg | Leu | His | Leu | Leu | Tyr | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Gly | Lys | Arg | Asp | Phe | Leu | Leu | Ser | Asp | Lys | Ala | Ser | Ser | Leu | Leu | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Cys | Phe | Gln | His | Gln | Glu | Glu | Ser | Leu | Ala | Gln | Gly | Pro | Pro | Leu | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Leu | Ala | Thr | Ser | Val | Thr | Ser | Trp | Trp | Ser | Pro | Gln | Asn | Ile | Ser | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Leu | Pro | Ser | Ala | Ala | Ser | Phe | Thr | Phe | Ser | Phe | His | Ser | Pro | Pro | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| His | Thr | Ala | Ala | His | Asn | Ala | Ser | Val | Asp | Met | Cys | Glu | Leu | Lys | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Arg | Asp | Leu | Gln | Leu | Leu | Ser | Gln | Phe | Leu | Lys | His | Pro | Gln | Lys | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ala | Ser | Arg | Arg | Pro | Ser | Ala | Ala | Pro | Ala | Ser | Gln | Gln | Leu | Gln | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ser | Leu | Glu | Ser | Lys | Leu | Thr | Ser | Val | Arg | Phe | Met | Gly | Asp | Met | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Val | Ser | Phe | Glu | Glu | Asp | Arg | Ile | Asn | Ala | Thr | Val | Trp | Lys | Leu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Gln | Pro | Thr | Ala | Gly | Leu | Gln | Asp | Leu | His | Ile | His | Ser | Arg | Gln | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Glu | Glu | Glu | Gln | Ser | Glu | Ile | Met | Glu | Tyr | Ser | Val | Leu | Leu | Pro | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Arg | Thr | Leu | Phe | Gln | Arg | Thr | Lys | Gly | Arg | Ser | Gly | Glu | Ala | Glu | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Lys | Arg | Leu | Leu | Leu | Val | Asp | Phe | Ser | Ser | Gln | Ala | Leu | Phe | Gln | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Asp | Lys | Asn | Ser | Ser | Gln | Val | Leu | Gly | Glu | Lys | Val | Leu | Gly | Ile | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Val | Val | Gln | Asn | Thr | Lys | Val | Ala | Asn | Leu | Thr | Glu | Pro | Val | Val | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Leu | Thr | Phe | Gln | His | Gln | Leu | Gln | Pro | Lys | Asn | Val | Thr | Leu | Gln | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Cys | Val | Phe | Trp | Val | Glu | Asp | Pro | Thr | Leu | Ser | Ser | Pro | Gly | His | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Trp | Ser | Ser | Ala | Gly | Cys | Glu | Thr | Val | Arg | Arg | Glu | Thr | Gln | Thr | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|
| | | | | 365 | | | | | | 370 | | | | | 375 |
| Ser | Cys | Phe | Cys | Asn 380 | His | Leu | Thr | Tyr | Phe 385 | Ala | Val | Leu | Met | Val 390 | |
| Ser | Ser | Val | Glu | Val 395 | Asp | Ala | Val | His | Lys 400 | His | Tyr | Leu | Ser | Leu 405 | |
| Leu | Ser | Tyr | Val | Gly 410 | Cys | Val | Val | Ser | Ala 415 | Leu | Ala | Cys | Leu | Val 420 | |
| Thr | Ile | Ala | Ala | Tyr 425 | Leu | Cys | Ser | Arg | Val 430 | Pro | Leu | Pro | Cys | Arg 435 | |
| Arg | Lys | Pro | Arg | Asp 440 | Tyr | Thr | Ile | Lys | Val 445 | His | Met | Asn | Leu | Leu 450 | |
| Leu | Ala | Val | Phe | Leu 455 | Leu | Asp | Thr | Ser | Phe 460 | Leu | Leu | Ser | Glu | Pro 465 | |
| Val | Ala | Leu | Thr | Gly 470 | Ser | Glu | Ala | Gly | Cys 475 | Arg | Ala | Ser | Ala | Ile 480 | |
| Phe | Leu | His | Phe | Ser 485 | Leu | Leu | Thr | Cys | Leu 490 | Ser | Trp | Met | Gly | Leu 495 | |
| Glu | Gly | Tyr | Asn | Leu 500 | Tyr | Arg | Leu | Val | Val 505 | Glu | Val | Phe | Gly | Thr 510 | |
| Tyr | Val | Pro | Gly | Tyr 515 | Leu | Leu | Lys | Leu | Ser 520 | Ala | Met | Gly | Trp | Gly 525 | |
| Phe | Pro | Ile | Phe | Leu 530 | Val | Thr | Leu | Val | Ala 535 | Leu | Val | Asp | Val | Asp 540 | |
| Asn | Tyr | Gly | Pro | Ile 545 | Ile | Leu | Ala | Val | His 550 | Arg | Thr | Pro | Glu | Gly 555 | |
| Val | Ile | Tyr | Pro | Ser 560 | Met | Cys | Trp | Ile | Arg 565 | Asp | Ser | Leu | Val | Ser 570 | |
| Tyr | Ile | Thr | Asn | Leu 575 | Gly | Leu | Phe | Ser | Leu 580 | Val | Phe | Leu | Phe | Asn 585 | |
| Met | Ala | Met | Leu | Ala 590 | Thr | Met | Val | Val | Gln 595 | Ile | Leu | Arg | Leu | Arg 600 | |
| Pro | His | Thr | Gln | Lys 605 | Trp | Ser | His | Val | Leu 610 | Thr | Leu | Leu | Gly | Leu 615 | |
| Ser | Leu | Val | Leu | Gly 620 | Leu | Pro | Trp | Ala | Leu 625 | Ile | Phe | Phe | Ser | Phe 630 | |
| Ala | Ser | Gly | Thr | Phe 635 | Gln | Leu | Val | Val | Leu 640 | Tyr | Leu | Phe | Ser | Ile 645 | |
| Ile | Thr | Ser | Phe | Gln 650 | Gly | Phe | Leu | Ile | Phe 655 | Ile | Trp | Tyr | Trp | Ser 660 | |

Met Arg Leu Gln Ala Arg Gly Gly Pro Ser Pro Leu Lys Ser Asn
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Ser Asp Ser Ala Arg Leu Pro Ile Ser Ser Gly Ser Thr Ser Ser
680 685 690

Ser Arg Ile

<210> 484
<211> 516
<212> DNA
<213> Homo sapiens

<220>
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<222> 68, 70, 84, 147
<223> unknown base

<400> 484
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cgggtggccct gacaggctct gaaggctggc tgccgagcca gtgccatctt 200
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<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 485
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<210> 486
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<220>
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<400> 486
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<210> 487
<211> 2849
<212> DNA
<213> Homo sapiens

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<221> unsure
<222> 2715
<223> unknown base

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cggagtacaa gatcctcagc atgagagaat tattactgtg tctactaatg 450
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<210> 488

<211> 345

<212> PRT

<213> Homo sapiens

<400> 488

| | | | | | | | | | | | | | | | | | | |
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| Met | Ser | Leu | Phe | Gly | Leu | Leu | Leu | Leu | Thr | Ser | Ala | Leu | Ala | Gly | 1 | 5 | 10 | 15 |
| Gln | Arg | Gln | Gly | Thr | Gln | Ala | Glu | Ser | Asn | Leu | Ser | Ser | Lys | Phe | 20 | 25 | 30 | |
| Gln | Phe | Ser | Ser | Asn | Lys | Glu | Gln | Asn | Gly | Val | Gln | Asp | Pro | Gln | 35 | 40 | 45 | |
| His | Glu | Arg | Ile | Ile | Thr | Val | Ser | Thr | Asn | Gly | Ser | Ile | His | Ser | 50 | 55 | 60 | |
| Pro | Arg | Phe | Pro | His | Thr | Tyr | Pro | Arg | Asn | Thr | Val | Leu | Val | Trp | 65 | 70 | 75 | |
| Arg | Leu | Val | Ala | Val | Glu | Glu | Asn | Val | Trp | Ile | Gln | Leu | Thr | Phe | 80 | 85 | 90 | |
| Asp | Glu | Arg | Phe | Gly | Leu | Glu | Asp | Pro | Glu | Asp | Asp | Ile | Cys | Lys | 95 | 100 | 105 | |
| Tyr | Asp | Phe | Val | Glu | Val | Glu | Glu | Pro | Ser | Asp | Gly | Thr | Ile | Leu | 110 | 115 | 120 | |
| Gly | Arg | Trp | Cys | Gly | Ser | Gly | Thr | Val | Pro | Gly | Lys | Gln | Ile | Ser | 125 | 130 | 135 | |
| Lys | Gly | Asn | Gln | Ile | Arg | Ile | Arg | Phe | Val | Ser | Asp | Glu | Tyr | Phe | 140 | 145 | 150 | |
| Pro | Ser | Glu | Pro | Gly | Phe | Cys | Ile | His | Tyr | Asn | Ile | Val | Met | Pro | 155 | 160 | 165 | |
| Gln | Phe | Thr | Glu | Ala | Val | Ser | Pro | Ser | Val | Leu | Pro | Pro | Ser | Ala | 170 | 175 | 180 | |
| Leu | Pro | Leu | Asp | Leu | Leu | Asn | Asn | Ala | Ile | Thr | Ala | Phe | Ser | Thr | 185 | 190 | 195 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Glu | Asp | Leu | Ile | Arg | Tyr | Leu | Glu | Pro | Glu | Arg | Trp | Gln | Leu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Asp | Leu | Glu | Asp | Leu | Tyr | Arg | Pro | Thr | Trp | Gln | Leu | Leu | Gly | Lys | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ala | Phe | Val | Phe | Gly | Arg | Lys | Ser | Arg | Val | Val | Asp | Leu | Asn | Leu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Leu | Thr | Glu | Glu | Val | Arg | Leu | Tyr | Ser | Cys | Thr | Pro | Arg | Asn | Phe | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Ser | Val | Ser | Ile | Arg | Glu | Glu | Leu | Lys | Arg | Thr | Asp | Thr | Ile | Phe | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Trp | Pro | Gly | Cys | Leu | Leu | Val | Lys | Arg | Cys | Gly | Gly | Asn | Cys | Ala | |
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| Cys | Cys | Leu | His | Asn | Cys | Asn | Glu | Cys | Gln | Cys | Val | Pro | Ser | Lys | |
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| Val | Thr | Lys | Lys | Tyr | His | Glu | Val | Leu | Gln | Leu | Arg | Pro | Lys | Thr | |
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| Gly | Val | Arg | Gly | Leu | His | Lys | Ser | Leu | Thr | Asp | Val | Ala | Leu | Glu | |
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| His | His | Glu | Glu | Cys | Asp | Cys | Val | Cys | Arg | Gly | Ser | Thr | Gly | Gly | |
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35 40 45

His Val Ile Val Asp Cys Thr Asp Lys His Leu Thr Glu Ile Pro
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Gly Gly Ile Pro Thr Asn Thr Thr Asn Leu Thr Leu Thr Ile Asn
65 70 75

His Ile Pro Asp Ile Ser Pro Ala Ser Phe His Arg Leu Asp His
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Leu Val Glu Ile Asp Phe Arg Cys Asn Cys Val Pro Ile Pro Leu
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Gly Ser Lys Asn Asn Met Cys Ile Lys Arg Leu Gln Ile Lys Pro
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Arg Ser Phe Ser Gly Leu Thr Tyr Leu Lys Ser Leu Tyr Leu Asp
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Gly Asn Gln Leu Leu Glu Ile Pro Gln Gly Leu Pro Pro Ser Leu
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Gln Leu Leu Ser Leu Glu Ala Asn Asn Ile Phe Ser Ile Arg Lys
155 160 165

Glu Asn Leu Thr Glu Leu Ala Asn Ile Glu Ile Leu Tyr Leu Gly
170 175 180

Gln Asn Cys Tyr Tyr Arg Asn Pro Cys Tyr Val Ser Tyr Ser Ile
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Glu Lys Asp Ala Phe Leu Asn Leu Thr Lys Leu Lys Val Leu Ser
200 205 210

Leu Lys Asp Asn Asn Val Thr Ala Val Pro Thr Val Leu Pro Ser
215 220 225

Thr Leu Thr Glu Leu Tyr Leu Tyr Asn Asn Met Ile Ala Lys Ile
230 235 240

Gln Glu Asp Asp Phe Asn Asn Leu Asn Gln Leu Gln Ile Leu Asp
245 250 255

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Ser | Gly | Asn | Cys | Pro | Arg | Cys | Tyr | Asn | Ala | Pro | Phe | Pro | Cys | |
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| Ala | Pro | Cys | Lys | Asn | Asn | Ser | Pro | Leu | Gln | Ile | Pro | Val | Asn | Ala | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Phe | Asp | Ala | Leu | Thr | Glu | Leu | Lys | Val | Leu | Arg | Leu | His | Ser | Asn | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ser | Leu | Gln | His | Val | Pro | Pro | Arg | Trp | Phe | Lys | Asn | Ile | Asn | Lys | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Leu | Gln | Glu | Leu | Asp | Leu | Ser | Gln | Asn | Phe | Leu | Ala | Lys | Glu | Ile | |
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| Gly | Asp | Ala | Lys | Phe | Leu | His | Phe | Leu | Pro | Ser | Leu | Ile | Gln | Leu | |
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| Asn | Leu | Ser | Gln | Ala | Phe | Ser | Ser | Leu | Lys | Ser | Leu | Lys | Ile | Leu | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Arg | Ile | Arg | Gly | Tyr | Val | Phe | Lys | Glu | Leu | Lys | Ser | Phe | Asn | Leu | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Ser | Pro | Leu | His | Asn | Leu | Gln | Asn | Leu | Glu | Val | Leu | Asp | Leu | Gly | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Thr | Asn | Phe | Ile | Lys | Ile | Ala | Asn | Leu | Ser | Met | Phe | Lys | Gln | Phe | |
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| Lys | Arg | Leu | Lys | Val | Ile | Asp | Leu | Ser | Val | Asn | Lys | Ile | Ser | Pro | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Ser | Gly | Asp | Ser | Ser | Glu | Val | Gly | Phe | Cys | Ser | Asn | Ala | Arg | Thr | |
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| Gln | Thr | Leu | Asp | Leu | Ser | Lys | Asn | Ser | Ile | Phe | Phe | Val | Lys | Ser | |
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| Ser | Asp | Phe | Gln | His | Leu | Ser | Phe | Leu | Lys | Cys | Leu | Asn | Leu | Ser | |
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| Leu | Ala | Glu | Leu | Arg | Tyr | Leu | Asp | Phe | Ser | Asn | Asn | Arg | Leu | Asp | |

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| Leu | Leu | His | Ser | Thr 560 | Ala | Phe | Glu | Glu | Leu 565 | His | Lys | Leu | Glu | Val 570 |
| Leu | Asp | Ile | Ser | Ser 575 | Asn | Ser | His | Tyr | Phe 580 | Gln | Ser | Glu | Gly | Ile 585 |
| Thr | His | Met | Leu | Asn 590 | Phe | Thr | Lys | Asn | Leu 595 | Lys | Val | Leu | Gln | Lys 600 |
| Leu | Met | Met | Asn | Asp 605 | Asn | Asp | Ile | Ser | Ser 610 | Ser | Thr | Ser | Arg | Thr 615 |
| Met | Glu | Ser | Glu | Ser 620 | Leu | Arg | Thr | Leu | Glu 625 | Phe | Arg | Gly | Asn | His 630 |
| Leu | Asp | Val | Leu | Trp 635 | Arg | Glu | Gly | Asp | Asn 640 | Arg | Tyr | Leu | Gln | Leu 645 |
| Phe | Lys | Asn | Leu | Leu 650 | Lys | Leu | Glu | Glu | Leu 655 | Asp | Ile | Ser | Lys | Asn 660 |
| Ser | Leu | Ser | Phe | Leu 665 | Pro | Ser | Gly | Val | Phe 670 | Asp | Gly | Met | Pro | Pro 675 |
| Asn | Leu | Lys | Asn | Leu 680 | Ser | Leu | Ala | Lys | Asn 685 | Gly | Leu | Lys | Ser | Phe 690 |
| Ser | Trp | Lys | Lys | Leu 695 | Gln | Cys | Leu | Lys | Asn 700 | Leu | Glu | Thr | Leu | Asp 705 |
| Leu | Ser | His | Asn | Gln 710 | Leu | Thr | Thr | Val | Pro 715 | Glu | Arg | Leu | Ser | Asn 720 |
| Cys | Ser | Arg | Ser | Leu 725 | Lys | Asn | Leu | Ile | Leu 730 | Lys | Asn | Asn | Gln | Ile 735 |
| Arg | Ser | Leu | Thr | Lys 740 | Tyr | Phe | Leu | Gln | Asp 745 | Ala | Phe | Gln | Leu | Arg 750 |
| Tyr | Leu | Asp | Leu | Ser 755 | Ser | Asn | Lys | Ile | Gln 760 | Met | Ile | Gln | Lys | Thr 765 |
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| His | His | Asn | Arg | Phe 785 | Leu | Cys | Thr | Cys | Asp 790 | Ala | Val | Trp | Phe | Val 795 |
| Trp | Trp | Val | Asn | His 800 | Thr | Glu | Val | Thr | Ile 805 | Pro | Tyr | Leu | Ala | Thr 810 |
| Asp | Val | Thr | Cys | Val 815 | Gly | Pro | Gly | Ala | His 820 | Lys | Gly | Gln | Ser | Val 825 |
| Ile | Ser | Leu | Asp | Leu 830 | Tyr | Thr | Cys | Glu | Leu 835 | Asp | Leu | Thr | Asn | Leu 840 |

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| Ile | Leu | Phe | Ser | Leu | Ser | Ile | Ser | Val | Ser | Leu | Phe | Leu | Met | Val | |
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| Met | Met | Thr | Ala | Ser | His | Leu | Tyr | Phe | Trp | Asp | Val | Trp | Tyr | Ile | |
| | | | | 860 | | | | | 865 | | | | | 870 | |
| Tyr | His | Phe | Cys | Lys | Ala | Lys | Ile | Lys | Gly | Tyr | Gln | Arg | Leu | Ile | |
| | | | | 875 | | | | | 880 | | | | | 885 | |
| Ser | Pro | Asp | Cys | Cys | Tyr | Asp | Ala | Phe | Ile | Val | Tyr | Asp | Thr | Lys | |
| | | | | 890 | | | | | 895 | | | | | 900 | |
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| | | | | 905 | | | | | 910 | | | | | 915 | |
| Leu | Glu | Asp | Pro | Arg | Glu | Lys | His | Phe | Asn | Leu | Cys | Leu | Glu | Glu | |
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| Arg | Asp | Trp | Leu | Pro | Gly | Gln | Pro | Val | Leu | Glu | Asn | Leu | Ser | Gln | |
| | | | | 935 | | | | | 940 | | | | | 945 | |
| Ser | Ile | Gln | Leu | Ser | Lys | Lys | Thr | Val | Phe | Val | Met | Thr | Asp | Lys | |
| | | | | 950 | | | | | 955 | | | | | 960 | |
| Tyr | Ala | Lys | Thr | Glu | Asn | Phe | Lys | Ile | Ala | Phe | Tyr | Leu | Ser | His | |
| | | | | 965 | | | | | 970 | | | | | 975 | |
| Gln | Arg | Leu | Met | Asp | Glu | Lys | Val | Asp | Val | Ile | Ile | Leu | Ile | Phe | |
| | | | | 980 | | | | | 985 | | | | | 990 | |
| Leu | Glu | Lys | Pro | Phe | Gln | Lys | Ser | Lys | Phe | Leu | Gln | Leu | Arg | Lys | |
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|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| | | | | 50 | | | | | 55 | | | | | 60 |
| Val | Gly | Lys | Tyr | Val 65 | Thr | Glu | Leu | Asp | Leu 70 | Ser | Asp | Asn | Phe | Ile 75 |
| Thr | His | Ile | Thr | Asn 80 | Glu | Ser | Phe | Gln | Gly 85 | Leu | Gln | Asn | Leu | Thr 90 |
| Lys | Ile | Asn | Leu | Asn 95 | His | Asn | Pro | Asn | Val 100 | Gln | His | Gln | Asn | Gly 105 |
| Asn | Pro | Gly | Ile | Gln 110 | Ser | Asn | Gly | Leu | Asn 115 | Ile | Thr | Asp | Gly | Ala 120 |
| Phe | Leu | Asn | Leu | Lys 125 | Asn | Leu | Arg | Glu | Leu 130 | Leu | Leu | Glu | Asp | Asn 135 |
| Gln | Leu | Pro | Gln | Ile 140 | Pro | Ser | Gly | Leu | Pro 145 | Glu | Ser | Leu | Thr | Glu 150 |
| Leu | Ser | Leu | Ile | Gln 155 | Asn | Asn | Ile | Tyr | Asn 160 | Ile | Thr | Lys | Glu | Gly 165 |
| Ile | Ser | Arg | Leu | Ile 170 | Asn | Leu | Lys | Asn | Leu 175 | Tyr | Leu | Ala | Trp | Asn 180 |
| Cys | Tyr | Phe | Asn | Lys 185 | Val | Cys | Glu | Lys | Thr 190 | Asn | Ile | Glu | Asp | Gly 195 |
| Val | Phe | Glu | Thr | Leu 200 | Thr | Asn | Leu | Glu | Leu 205 | Leu | Ser | Leu | Ser | Phe 210 |
| Asn | Ser | Leu | Ser | His 215 | Val | Pro | Pro | Lys | Leu 220 | Pro | Ser | Ser | Leu | Arg 225 |
| Lys | Leu | Phe | Leu | Ser 230 | Asn | Thr | Gln | Ile | Lys 235 | Tyr | Ile | Ser | Glu | Glu 240 |
| Asp | Phe | Lys | Gly | Leu 245 | Ile | Asn | Leu | Thr | Leu 250 | Leu | Asp | Leu | Ser | Gly 255 |
| Asn | Cys | Pro | Arg | Cys 260 | Phe | Asn | Ala | Pro | Phe 265 | Pro | Cys | Val | Pro | Cys 270 |
| Asp | Gly | Gly | Ala | Ser 275 | Ile | Asn | Ile | Asp | Arg 280 | Phe | Ala | Phe | Gln | Asn 285 |
| Leu | Thr | Gln | Leu | Arg 290 | Tyr | Leu | Asn | Leu | Ser 295 | Ser | Thr | Ser | Leu | Arg 300 |
| Lys | Ile | Asn | Ala | Ala 305 | Trp | Phe | Lys | Asn | Met 310 | Pro | His | Leu | Lys | Val 315 |
| Leu | Asp | Leu | Glu | Phe 320 | Asn | Tyr | Leu | Val | Gly 325 | Glu | Ile | Val | Ser | Gly 330 |
| Ala | Phe | Leu | Thr | Met 335 | Leu | Pro | Arg | Leu | Glu 340 | Ile | Leu | Asp | Leu | Ser 345 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Asn | Tyr | Ile | Lys | Gly | Ser | Tyr | Pro | Gln | His | Ile | Asn | Ile | Ser | 350 | 355 | 360 |
| Arg | Asn | Phe | Ser | Lys | Leu | Leu | Ser | Leu | Arg | Ala | Leu | His | Leu | Arg | 365 | 370 | 375 |
| Gly | Tyr | Val | Phe | Gln | Glu | Leu | Arg | Glu | Asp | Asp | Phe | Gln | Pro | Leu | 380 | 385 | 390 |
| Met | Gln | Leu | Pro | Asn | Leu | Ser | Thr | Ile | Asn | Leu | Gly | Ile | Asn | Phe | 395 | 400 | 405 |
| Ile | Lys | Gln | Ile | Asp | Phe | Lys | Leu | Phe | Gln | Asn | Phe | Ser | Asn | Leu | 410 | 415 | 420 |
| Glu | Ile | Ile | Tyr | Leu | Ser | Glu | Asn | Arg | Ile | Ser | Pro | Leu | Val | Lys | 425 | 430 | 435 |
| Asp | Thr | Arg | Gln | Ser | Tyr | Ala | Asn | Ser | Ser | Ser | Phe | Gln | Arg | His | 440 | 445 | 450 |
| Ile | Arg | Lys | Arg | Arg | Ser | Thr | Asp | Phe | Glu | Phe | Asp | Pro | His | Ser | 455 | 460 | 465 |
| Asn | Phe | Tyr | His | Phe | Thr | Arg | Pro | Leu | Ile | Lys | Pro | Gln | Cys | Ala | 470 | 475 | 480 |
| Ala | Tyr | Gly | Lys | Ala | Leu | Asp | Leu | Ser | Leu | Asn | Ser | Ile | Phe | Phe | 485 | 490 | 495 |
| Ile | Gly | Pro | Asn | Gln | Phe | Glu | Asn | Leu | Pro | Asp | Ile | Ala | Cys | Leu | 500 | 505 | 510 |
| Asn | Leu | Ser | Ala | Asn | Ser | Asn | Ala | Gln | Val | Leu | Ser | Gly | Thr | Glu | 515 | 520 | 525 |
| Phe | Ser | Ala | Ile | Pro | His | Val | Lys | Tyr | Leu | Asp | Leu | Thr | Asn | Asn | 530 | 535 | 540 |
| Arg | Leu | Asp | Phe | Asp | Asn | Ala | Ser | Ala | Leu | Thr | Glu | Leu | Ser | Asp | 545 | 550 | 555 |
| Leu | Glu | Val | Leu | Asp | Leu | Ser | Tyr | Asn | Ser | His | Tyr | Phe | Arg | Ile | 560 | 565 | 570 |
| Ala | Gly | Val | Thr | His | His | Leu | Glu | Phe | Ile | Gln | Asn | Phe | Thr | Asn | 575 | 580 | 585 |
| Leu | Lys | Val | Leu | Asn | Leu | Ser | His | Asn | Asn | Ile | Tyr | Thr | Leu | Thr | 590 | 595 | 600 |
| Asp | Lys | Tyr | Asn | Leu | Glu | Ser | Lys | Ser | Leu | Val | Glu | Leu | Val | Phe | 605 | 610 | 615 |
| Ser | Gly | Asn | Arg | Leu | Asp | Ile | Leu | Trp | Asn | Asp | Asp | Asp | Asn | Arg | 620 | 625 | 630 |
| Tyr | Ile | Ser | Ile | Phe | Lys | Gly | Leu | Lys | Asn | Leu | Thr | Arg | Leu | Asp | | | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| 635 | | | | | | | | | 640 | | | | | 645 |
| Leu | Ser | Leu | Asn | Arg 650 | Leu | Lys | His | Ile | Pro 655 | Asn | Glu | Ala | Phe | Leu 660 |
| Asn | Leu | Pro | Ala | Ser 665 | Leu | Thr | Glu | Leu | His 670 | Ile | Asn | Asp | Asn | Met 675 |
| Leu | Lys | Phe | Phe | Asn 680 | Trp | Thr | Leu | Leu | Gln 685 | Gln | Phe | Pro | Arg | Leu 690 |
| Glu | Leu | Leu | Asp | Leu 695 | Arg | Gly | Asn | Lys | Leu 700 | Leu | Phe | Leu | Thr | Asp 705 |
| Ser | Leu | Ser | Asp | Phe 710 | Thr | Ser | Ser | Leu | Arg 715 | Thr | Leu | Leu | Leu | Ser 720 |
| His | Asn | Arg | Ile | Ser 725 | His | Leu | Pro | Ser | Gly 730 | Phe | Leu | Ser | Glu | Val 735 |
| Ser | Ser | Leu | Lys | His 740 | Leu | Asp | Leu | Ser | Ser 745 | Asn | Leu | Leu | Lys | Thr 750 |
| Ile | Asn | Lys | Ser | Ala 755 | Leu | Glu | Thr | Lys | Thr 760 | Thr | Thr | Lys | Leu | Ser 765 |
| Met | Leu | Glu | Leu | His 770 | Gly | Asn | Pro | Phe | Glu 775 | Cys | Thr | Cys | Asp | Ile 780 |
| Gly | Asp | Phe | Arg | Arg 785 | Trp | Met | Asp | Glu | His 790 | Leu | Asn | Val | Lys | Ile 795 |
| Pro | Arg | Leu | Val | Asp 800 | Val | Ile | Cys | Ala | Ser 805 | Pro | Gly | Asp | Gln | Arg 810 |
| Gly | Lys | Ser | Ile | Val 815 | Ser | Leu | Glu | Leu | Thr 820 | Thr | Cys | Val | Ser | Asp 825 |
| Val | Thr | Ala | Val | Ile 830 | Leu | Phe | Phe | Phe | Thr 835 | Phe | Phe | Ile | Thr | Thr 840 |
| Met | Val | Met | Leu | Ala 845 | Ala | Leu | Ala | His | His 850 | Leu | Phe | Tyr | Trp | Asp 855 |
| Val | Trp | Phe | Ile | Tyr 860 | Asn | Val | Cys | Leu | Ala 865 | Lys | Val | Lys | Gly | Tyr 870 |
| Arg | Ser | Leu | Ser | Thr 875 | Ser | Gln | Thr | Phe | Tyr 880 | Asp | Ala | Tyr | Ile | Ser 885 |
| Tyr | Asp | Thr | Lys | Asp 890 | Ala | Ser | Val | Thr | Asp 895 | Trp | Val | Ile | Asn | Glu 900 |
| Leu | Arg | Tyr | His | Leu 905 | Glu | Glu | Ser | Arg | Asp 910 | Lys | Asn | Val | Leu | Leu 915 |
| Cys | Leu | Glu | Glu | Arg 920 | Asp | Trp | Asp | Pro | Gly 925 | Leu | Ala | Ile | Ile | Asp 930 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|--|
| Asn | Leu | Met | Gln | Ser | Ile | Asn | Gln | Ser | Lys | Lys | Thr | Val | Phe | Val | |
| | | | | 935 | | | | | 940 | | | | | 945 | |
| Leu | Thr | Lys | Lys | Tyr | Ala | Lys | Ser | Trp | Asn | Phe | Lys | Thr | Ala | Phe | |
| | | | | 950 | | | | | 955 | | | | | 960 | |
| Tyr | Leu | Ala | Leu | Gln | Arg | Leu | Met | Asp | Glu | Asn | Met | Asp | Val | Ile | |
| | | | | 965 | | | | | 970 | | | | | 975 | |
| Ile | Phe | Ile | Leu | Leu | Glu | Pro | Val | Leu | Gln | His | Ser | Gln | Tyr | Leu | |
| | | | | 980 | | | | | 985 | | | | | 990 | |
| Arg | Leu | Arg | Gln | Arg | Ile | Cys | Lys | Ser | Ser | Ile | Leu | Gln | Trp | Pro | |
| | | | | 995 | | | | | 1000 | | | | | 1005 | |
| Asp | Asn | Pro | Lys | Ala | Glu | Gly | Leu | Phe | Trp | Gln | Thr | Leu | Arg | Asn | |
| | | | | 1010 | | | | | 1015 | | | | | 1020 | |
| Val | Val | Leu | Thr | Glu | Asn | Asp | Ser | Arg | Tyr | Asn | Asn | Met | Tyr | Val | |
| | | | | 1025 | | | | | 1030 | | | | | 1035 | |
| Asp | Ser | Ile | Lys | Gln | Tyr | | | | | | | | | | |
| | | | | 1040 | | | | | | | | | | | |

<210> 499
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 499
 taaagaccca gctgtgaccg 20

<210> 500
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 500
 atccatgagc ctctgatggg 20

<210> 501
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 501
 atttatgtct cgaggaaagg gactgggttac cagggcagcc agttc 45

<210> 502

<211> 21
 <212> DNA
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<220>
 <223> Synthetic oligonucleotide probe

<400> 502
 gccgagacaa aaacgttctc c 21

<210> 503
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 503
 catccatggt ctcattcatt agcc 24

<210> 504
 <211> 46
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 504
 tcgacaacct catgcagagc atcaaccaa gcaagaaaac agtatt 46

<210> 505
 <211> 1738
 <212> DNA
 <213> Homo sapiens

<400> 505
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 ctgagatcc ctgcacctcg acccagcgt cgcgaagct ggccctgcac 100
 ggctgcaagg gaggtctctg tggacaggcc aggcaggtgg gcctcaggag 150
 gtgcctccag ggggccagtg ggcctgaggc ccagcaagg gctagggctc 200
 atctccagtc ccaggacaca gcagcggcca ccatggccac gcctgggctc 250
 cagcagcatc agcagcccc aggaccggg aggcacaggt ggcaccacc 300
 acccgaggga gcagctctg ccctgtccg ggggatgact gattctctc 350
 cgccaggcca ccagaggag aaggccacc cgcctggagg cacaggccat 400
 gaggggtct caggaggtgc tgctgatgtg gcttctgtg ttggcagtgg 450
 gcggcacaga gcagcctac cggcccgcc gtaggtgtg tgctgtccg 500

[illegible]

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<210> 507
<211> 1700
<212> DNA
<213> Homo sapiens
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tcccaaggcc aggtggaccc tcagctgagg gaaggtagca gctccctgct 1600
ggagcctggg acccatggca caggccaggc agcccggagg ctgggtgggg 1650
cctcagtggg ggctgctgcc tgacccccag cacaataaaa atgaaacgtg 1700

<210> 508

<211> 273

<212> PRT

<213> Homo sapiens

<400> 508

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Arg | Gly | Ser | Gln | Glu | Val | Leu | Leu | Met | Trp | Leu | Leu | Val | Leu | 1 | 5 | 10 | 15 |
| Ala | Val | Gly | Gly | Thr | Glu | His | Ala | Tyr | Arg | Pro | Gly | Arg | Arg | Val | 20 | 25 | 30 | |
| Cys | Ala | Val | Arg | Ala | His | Gly | Asp | Pro | Val | Ser | Glu | Ser | Phe | Val | 35 | 40 | 45 | |
| Gln | Arg | Val | Tyr | Gln | Pro | Phe | Leu | Thr | Thr | Cys | Asp | Gly | His | Arg | 50 | 55 | 60 | |
| Ala | Cys | Ser | Thr | Tyr | Arg | Thr | Ile | Tyr | Arg | Thr | Ala | Tyr | Arg | Arg | 65 | 70 | 75 | |
| Ser | Pro | Gly | Leu | Ala | Pro | Ala | Arg | Pro | Arg | Tyr | Ala | Cys | Cys | Pro | 80 | 85 | 90 | |
| Gly | Trp | Lys | Arg | Thr | Ser | Gly | Leu | Pro | Gly | Ala | Cys | Gly | Ala | Ala | 95 | 100 | 105 | |
| Ile | Cys | Gln | Pro | Pro | Cys | Arg | Asn | Gly | Gly | Ser | Cys | Val | Gln | Pro | 110 | 115 | 120 | |
| Gly | Arg | Cys | Arg | Cys | Pro | Ala | Gly | Trp | Arg | Gly | Asp | Thr | Cys | Gln | 125 | 130 | 135 | |
| Ser | Asp | Val | Asp | Glu | Cys | Ser | Ala | Arg | Arg | Gly | Gly | Cys | Pro | Gln | 140 | 145 | 150 | |
| Arg | Cys | Ile | Asn | Thr | Ala | Gly | Ser | Tyr | Trp | Cys | Gln | Cys | Trp | Glu | 155 | 160 | 165 | |
| Gly | His | Ser | Leu | Ser | Ala | Asp | Gly | Thr | Leu | Cys | Val | Pro | Lys | Gly | 170 | 175 | 180 | |
| Gly | Pro | Pro | Arg | Val | Ala | Pro | Asn | Pro | Thr | Gly | Val | Asp | Ser | Ala | 185 | 190 | 195 | |
| Met | Lys | Glu | Glu | Val | Gln | Arg | Leu | Gln | Ser | Arg | Val | Asp | Leu | Leu | 200 | 205 | 210 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Glu | Lys | Leu | Gln | Leu | Val | Leu | Ala | Pro | Leu | His | Ser | Leu | Ala |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ser | Gln | Ala | Leu | Glu | His | Gly | Leu | Pro | Asp | Pro | Gly | Ser | Leu | Leu |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Val | His | Ser | Phe | Gln | Gln | Leu | Gly | Arg | Ile | Asp | Ser | Leu | Ser | Glu |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Gln | Ile | Ser | Phe | Leu | Glu | Glu | Gln | Leu | Gly | Ser | Cys | Ser | Cys | Lys |
| | | | | 260 | | | | | 265 | | | | | 270 |

Lys Asp Ser

<210> 509
 <211> 1538
 <212> DNA
 <213> Homo sapiens

<400> 509
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 ctgaggcccc agcaagggtc aggggtccatc tccagtccca ggacacagca 150
 gcggccacca tggccacgcc tgggctccag cagcatcagc agccccagg 200
 accggggagg cacaggtggc ccccaccacc cggaggagca gctcctgccc 250
 ctgtccgggg gatgactgat tctcctccgc caggccacc agaggagaag 300
 gccacccgc ctggaggcac aggccatgag gggctctcag gaggtgctgc 350
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 agccctgggc tggcccctgc caggcctcgc tacgcgtgct gccccggctg 600
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 cctgcaggat ggcgggggtga cacttgccag tcagatgtgg atgaatgcag 750
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actggatttc atactttcct cgtggctctc aaccagacaa ccaatgaaga 1150
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cccagtgtgc tggatcgaag gggatatttg ccaactggagg aaagtggaag 1300
tcgacctccc agtactcaag agaccagtag cagcctcttg ccacagagcc 1350
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taattagggc tatgagagat ttcaggtgag aagttaaacc tgagacagag 1550
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ccttttagga atgggacagg taccttcac ttgttgtann nnnnnnnnnn 2050
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aggaagcccg agtgcact taaacactat cccctcagac tccctgtgtg 2200
aggcctgcag aggccctgaa tgcacaaatg ggaaaccaag gcacagagag 2250
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caccggcaga gtcccagagc cacttcaccc tgggggtggg ctgtggcccc 2500
cagtcagctc tgctcaggac ctgctctatt tcagggaaga agatttatgt 2550

attatatgtg gctatatattc ctagagcacc tgtgttttcc tctttctaag 2600
ccagggtcct gtctggatga cttatgcggt gggggagtgt aaaccggaac 2650
ttttcatcta tttgaaggcg attaaactgt gtctaatagca 2690

<210> 515
<211> 364
<212> PRT
<213> Homo sapiens

<400> 515
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Lys Leu Pro Gly Arg Asn Thr Phe Cys Cys Asp Gly Arg Val Met
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35 40 45
Leu Gly Thr Cys Thr Leu Phe Phe Ala Phe Glu Cys Arg Tyr Leu
50 55 60
Ala Val Gln Leu Ser Pro Ala Ile Pro Val Phe Ala Ala Met Leu
65 70 75
Phe Leu Phe Ser Met Ala Thr Leu Leu Arg Thr Ser Phe Ser Asp
80 85 90
Pro Gly Val Ile Pro Arg Ala Leu Pro Asp Glu Ala Ala Phe Ile
95 100 105
Glu Met Glu Ile Glu Ala Thr Asn Gly Ala Val Pro Gln Gly Gln
110 115 120
Arg Pro Pro Pro Arg Ile Lys Asn Phe Gln Ile Asn Asn Gln Ile
125 130 135
Val Lys Leu Lys Tyr Cys Tyr Thr Cys Lys Ile Phe Arg Pro Pro
140 145 150
Arg Ala Ser His Cys Ser Ile Cys Asp Asn Cys Val Glu Arg Phe
155 160 165
Asp His His Cys Pro Trp Val Gly Asn Cys Val Gly Lys Arg Asn
170 175 180
Tyr Arg Tyr Phe Tyr Leu Phe Ile Leu Ser Leu Ser Leu Leu Thr
185 190 195
Ile Tyr Val Phe Ala Phe Asn Ile Val Tyr Val Ala Leu Lys Ser
200 205 210
Leu Lys Ile Gly Phe Leu Glu Thr Leu Lys Glu Thr Pro Gly Thr
215 220 225
Val Leu Glu Val Leu Ile Cys Phe Phe Thr Leu Trp Ser Val Val

| | | | | | |
|-----------------|---------------------|-------------------------|-----|--|-----|
| | 230 | | 235 | | 240 |
| Gly Leu Thr Gly | Phe His Thr Phe Leu | Val Ala Leu Asn Gln Thr | | | |
| | 245 | 250 | | | 255 |
| Thr Asn Glu Asp | Ile Lys Gly Ser Trp | Thr Gly Lys Asn Arg Val | | | |
| | 260 | 265 | | | 270 |
| Gln Asn Pro Tyr | Ser His Gly Asn Ile | Val Lys Asn Cys Cys Glu | | | |
| | 275 | 280 | | | 285 |
| Val Leu Cys Gly | Pro Leu Pro Pro Ser | Val Leu Asp Arg Arg Gly | | | |
| | 290 | 295 | | | 300 |
| Ile Leu Pro Leu | Glu Glu Ser Gly Ser | Arg Pro Pro Ser Thr Gln | | | |
| | 305 | 310 | | | 315 |
| Glu Thr Ser Ser | Ser Leu Leu Pro Gln | Ser Pro Ala Pro Thr Glu | | | |
| | 320 | 325 | | | 330 |
| His Leu Asn Ser | Asn Glu Met Pro Glu | Asp Ser Ser Thr Pro Glu | | | |
| | 335 | 340 | | | 345 |
| Glu Met Pro Pro | Pro Glu Pro Pro Glu | Pro Pro Gln Glu Ala Ala | | | |
| | 350 | 355 | | | 360 |
| Glu Ala Glu Lys | | | | | |

<210> 516
 <211> 255
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 36, 38, 88, 118, 135, 193, 213, 222
 <223> unknown base

<400> 516
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 tgaattagggt attatagggga tgggtgggggtt gatttttntt cctggagggt 100
 tttggcttttg gactctcnct ttctcccaca gagcncttcg accatcactg 150
 cccctgggtg gggaattgtg ttggaaagag gaactaccgc tanttctacc 200
 tcttcacact ttntctctcc cncctcaca tctatgtctt cgccttcaac 250
 atcgt 255

<210> 517
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>

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<223> Synthetic oligonucleotide probe

<400> 517
caacgtgatt tcaaagctgg gctc 24

<210> 518
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 518
gcctcgtatc aagaatttcc 20

<210> 519
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 519
agtggaaagtc gacctccc 18

<210> 520
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 520
ctcacctgaa atctctcata gcc 24

<210> 521
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 521
cgcaaaaccc attttgggag caggaattcc aatcatgtct gtgatgggtg 50

<210> 522
<211> 1679
<212> DNA
<213> Homo sapiens

<400> 522
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agagcaacac aatctatcag gaaagaaaga aagaaaaaaa ccgaacctga 100

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aattcaatca gtccatagag acgaacagaa tgagaccttc cggcccaagc 1600
 gtggcgctgc gggcactttg gtagactgtg ccaccacggc gtgtgttgtg 1650
 aaacgtgaaa taaaaagagc aaaaaaaaaa 1679

<210> 523
 <211> 344
 <212> PRT
 <213> Homo sapiens

<400> 523

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Lys | Thr | Ile | Gln | Pro | Lys | Met | His | Asn | Ser | Ile | Ser | Trp | Ala | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ile | Phe | Thr | Gly | Leu | Ala | Ala | Leu | Cys | Leu | Phe | Gln | Gly | Val | Pro | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Val | Arg | Ser | Gly | Asp | Ala | Thr | Phe | Pro | Lys | Ala | Met | Asp | Asn | Val | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Thr | Val | Arg | Gln | Gly | Glu | Ser | Ala | Thr | Leu | Arg | Cys | Thr | Ile | Asp | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Asn | Arg | Val | Thr | Arg | Val | Ala | Trp | Leu | Asn | Arg | Ser | Thr | Ile | Leu | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Tyr | Ala | Gly | Asn | Asp | Lys | Trp | Cys | Leu | Asp | Pro | Arg | Val | Val | Leu | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Leu | Ser | Asn | Thr | Gln | Thr | Gln | Tyr | Ser | Ile | Glu | Ile | Gln | Asn | Val | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Asp | Val | Tyr | Asp | Glu | Gly | Pro | Tyr | Thr | Cys | Ser | Val | Gln | Thr | Asp | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
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| Asn | Asn | Ile | Ser | Leu | Thr | Cys | Ile | Ala | Thr | Gly | Arg | Pro | Glu | Pro | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Thr | Val | Thr | Trp | Arg | His | Ile | Ser | Pro | Lys | Ala | Val | Gly | Phe | Val | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Ser | Glu | Asp | Glu | Tyr | Leu | Glu | Ile | Gln | Gly | Ile | Thr | Arg | Glu | Gln | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ser | Gly | Asp | Tyr | Glu | Cys | Ser | Ala | Ser | Asn | Asp | Val | Ala | Ala | Pro | |
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| Val | Val | Arg | Arg | Val | Lys | Val | Thr | Val | Asn | Tyr | Pro | Pro | Tyr | Ile | |
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| Phe | Gln | Lys | Gly | Thr | Arg | Gln | Leu | Leu | Gly | Ser | Arg | Thr | Gln | Leu |
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| Cys | Pro | Val | Gly | Ser | Pro | Met | Asn | Pro | Gly | Gln | Leu | Cys | Glu | Val |
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<400> 559

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<400> 561

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<210> 562

<211> 19

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<223> Synthetic oligonucleotide probe

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<210> 563

<220>
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 <400> 568
 gccaggctat gaggtcctt 20

 <210> 569
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 <400> 569
 ttcaagttcc tgaagccgat tat 23

 <210> 570
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 <400> 570
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 <210> 571
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 <220>
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 <400> 571
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 <210> 572
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 <212> DNA
 <213> Artificial Sequence

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 <400> 572
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 <210> 573
 <211> 24
 <212> DNA
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<400> 573
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<210> 574
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<220>
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<400> 574
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<210> 575
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<400> 575
tctgcagacg cgatggataa 20

<210> 576
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<400> 577
cacgtggcct ttcacactga 20

<210> 578
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acttgtgaca gcagtatgct gtctt 25

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 <400> 579
 aagcttctgt tcaatcccag cgggcc 26

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 <400> 580
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 <210> 581
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 <400> 581
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 <210> 582
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 <400> 582
 acacctgagg cacctgagag aggaactct 29

 <210> 583
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 <220>
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 <400> 583
 gacagcccag tacacctgca a 21

 <210> 584
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<211> 20
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 <400> 600
 gactacaagg cgctcagcta 20

 <210> 601
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 <400> 601
 ccggctgggt ctcactcctc c 21

 <210> 602
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 <400> 602
 cgttcgtgca gcgtgtgta 19

 <210> 603
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 <400> 603
 cttcctcacc acctgcgacg gg 22

 <210> 604
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<400> 605
 agatgtggat gaatgcagtg cta 23

<210> 606
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<400> 606
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<210> 607
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<220>
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<400> 607
 acagagtgtta ccgtctgcag aca 23

<210> 608
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<400> 608
 agcctcctgg tgcaactcct 19

<210> 609
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<400> 609
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<210> 610
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<220>
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<400> 610
gctgggcagt cacgagtctt 20

<210> 611
<211> 2840
<212> DNA
<213> Homo Sapien

<400> 611
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aagcaaccga gaggagggga ggcaaaaaca ccgaaaaaca aaaagagaga 100
aacaacaccc aacaactggg gtggggggaa gaaagaaaga aaagaaaccc 150
acccacccac caaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaatc 200
ctgtggcgcg ccgcctggtt cccgggaaga ctgcgcagca ccagggggtg 250
ggggagtgcg agctgaaagc tgctggagag tgagcagccc tagcagggat 300
ggacatgatg ctgttggtgc aggggtgctt ttgctcgaac cagtggctgg 350
cggcgggtgct cctcagcctg tgctgcctgc taccctcctg cctcccggt 400
ggacagagtg tggacttccc ctgggcggcc gtggacaaca tgatggtcag 450
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aggggtgcctg gctgaaccgg tcaagtatta tttttgcggg aggtgataag 550
tggtcagtggt atctctcaggt ttcaatttca acattgaata aaagggacta 600
cagcctccag atacagaatg tagatgtgac agatgatggc ccatacacgt 650
gttctgttca gactcaacat acaccagaa caatgcaggt gcattctaact 700
gtgcaagttc ctctaagat atatgacatc tcaaatgata tgaccgtcaa 750
tgaaggaacc aacgtcactc ttacttgttt ggccactggg aaaccagagc 800
cttccatttc ttggcgacac atctcccat cagcaaaacc atttgaaaat 850
ggacaatatt tggacattta tggaattaca agggaccagg ctggggaata 900
tgaatgcagt gcgaaaaatg ctgtgtcatt ccagatgtg aggaaagtaa 950
aagttgttgt caactttgct cctactattc aggaaattaa atctggcacc 1000
gtgacccccg gacgcagtgg cctgataaga tgtgaagggtg cagggtgtgcc 1050
gcctccagcc tttgaatggt acaaggaga gaagaagctc ttcaatggcc 1100
aacaaggaat tattattcaa aatttttagca caagatccat tctcactgtt 1150
accaacgtga cacaggagca cttcggcaat tatacctgtg tggctgcaa 1200
caagctaggc acaaccaatg cgagcctgcc tcttaaccct ccaagtacag 1250

gatggagcaa caggccccctc gggaccccaa ggcccaccgg gagtcaaggg 700
agaggcgggc ctccaaggac cccaggggtgc tccagggag caaggagcca 750
ctggcacccc aggaccccaa ggagagaagg gcagcaaagg cgatgggggt 800
ctcattggcc caaaagggga aactggaact aaggagaga aaggagacct 850
gggtctccca ggaagcaaag gggacaggg catgaaagga gatgcagggg 900
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ggcccaccag gtttggctgg ttttcctgga gctaaaggag atcaaggaca 1000
acctggactg caggggtgtc cgggccctcc tggcgagtg ggacaccag 1050
gtgccaaagg tgagcctggc agtgcctggc cccctgggcg agcaggactt 1100
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caggccctgc aggtgtgaag ggagaacagg ggagcccagg gctggcaggt 1250
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aggatcttct ggggagcaag gagtaaagg agaaaaagg gaaagagggt 1350
aaaactcagt gtccgtcagg attgtcggca gtagtaaccg aggccgggct 1400
gaagtttact acagtggtag ctgggggaca atttgcgat acgagtggca 1450
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ctggggccat catgactgca gccacgagga ggacgcaggc gtggagtga 1650
gcgtctgacc cggaaacct ttcacttctc tgctcccgag gtgtcctcgg 1700
gctcatatgt ggggaaggcag aggatctctg aggagttccc tggggacaac 1750
tgagcagcct ctggagaggg gccattaata aagctcaaca tcattga 1797

<210> 614
<211> 520
<212> PRT
<213> Homo Sapien

<400> 614
Met Arg Asn Lys Lys Ile Leu Lys Glu Asp Glu Leu Leu Ser Glu
1 5 10 15
Thr Gln Gln Ala Ala Phe His Gln Ile Ala Met Glu Pro Phe Glu
20 25 30

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Asn | Val | Pro | Lys | Pro | Lys | Arg | Arg | Asn | Gly | Val | Asn | Phe | Ser | 35 | 40 | 45 |
| Leu | Ala | Val | Val | Val | Ile | Tyr | Leu | Ile | Leu | Leu | Thr | Ala | Gly | Ala | 50 | 55 | 60 |
| Gly | Leu | Leu | Val | Val | Gln | Val | Leu | Asn | Leu | Gln | Ala | Arg | Leu | Arg | 65 | 70 | 75 |
| Val | Leu | Glu | Met | Tyr | Phe | Leu | Asn | Asp | Thr | Leu | Ala | Ala | Glu | Asp | 80 | 85 | 90 |
| Ser | Pro | Ser | Phe | Ser | Leu | Leu | Gln | Ser | Ala | His | Pro | Gly | Glu | His | 95 | 100 | 105 |
| Leu | Ala | Gln | Gly | Ala | Ser | Arg | Leu | Gln | Val | Leu | Gln | Ala | Gln | Leu | 110 | 115 | 120 |
| Thr | Trp | Val | Arg | Val | Ser | His | Glu | His | Leu | Leu | Gln | Arg | Val | Asp | 125 | 130 | 135 |
| Asn | Phe | Thr | Gln | Asn | Pro | Gly | Met | Phe | Arg | Ile | Lys | Gly | Glu | Gln | 140 | 145 | 150 |
| Gly | Ala | Pro | Gly | Leu | Gln | Gly | His | Lys | Gly | Ala | Met | Gly | Met | Pro | 155 | 160 | 165 |
| Gly | Ala | Pro | Gly | Pro | Pro | Gly | Pro | Pro | Ala | Glu | Lys | Gly | Ala | Lys | 170 | 175 | 180 |
| Gly | Ala | Met | Gly | Arg | Asp | Gly | Ala | Thr | Gly | Pro | Ser | Gly | Pro | Gln | 185 | 190 | 195 |
| Gly | Pro | Pro | Gly | Val | Lys | Gly | Glu | Ala | Gly | Leu | Gln | Gly | Pro | Gln | 200 | 205 | 210 |
| Gly | Ala | Pro | Gly | Lys | Gln | Gly | Ala | Thr | Gly | Thr | Pro | Gly | Pro | Gln | 215 | 220 | 225 |
| Gly | Glu | Lys | Gly | Ser | Lys | Gly | Asp | Gly | Gly | Leu | Ile | Gly | Pro | Lys | 230 | 235 | 240 |
| Gly | Glu | Thr | Gly | Thr | Lys | Gly | Glu | Lys | Gly | Asp | Leu | Gly | Leu | Pro | 245 | 250 | 255 |
| Gly | Ser | Lys | Gly | Asp | Arg | Gly | Met | Lys | Gly | Asp | Ala | Gly | Val | Met | 260 | 265 | 270 |
| Gly | Pro | Pro | Gly | Ala | Gln | Gly | Ser | Lys | Gly | Asp | Phe | Gly | Arg | Pro | 275 | 280 | 285 |
| Gly | Pro | Pro | Gly | Leu | Ala | Gly | Phe | Pro | Gly | Ala | Lys | Gly | Asp | Gln | 290 | 295 | 300 |
| Gly | Gln | Pro | Gly | Leu | Gln | Gly | Val | Pro | Gly | Pro | Pro | Gly | Ala | Val | 305 | 310 | 315 |
| Gly | His | Pro | Gly | Ala | Lys | Gly | Glu | Pro | Gly | Ser | Ala | Gly | Ser | Pro | | | |

cctgacacag attgatgtca atgtccagga tcattttctgg gatgggaagg 350
 gatgtgagat gatctgttac tgcaacttca gcgaattgct ctgctgcca 400
 aaagacgttt tctttggacc aaagatctct ttcgtgattc cttgcaacaa 450
 tcaatgagaa tcttcatgta ttctggagaa caccattcct gatttccac 500
 aaactgcact acatcagtat aactgcattt ctagtttcta tatagtgcaa 550
 tagagcatag attctataaa ttcttacttg tctaagacaa gtaaactctgt 600
 gttaaacaag tagtaataaa agttaattca atctaaaaaa aaaaaaa 647

<210> 616
 <211> 98
 <212> PRT
 <213> Homo Sapien

<400> 616
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 20 25 30
 Lys Ile Leu Lys Asp His Asn Cys His Asn Leu Pro Glu Gly Val
 35 40 45
 Ala Asp Leu Thr Gln Ile Asp Val Asn Val Gln Asp His Phe Trp
 50 55 60
 Asp Gly Lys Gly Cys Glu Met Ile Cys Tyr Cys Asn Phe Ser Glu
 65 70 75
 Leu Leu Cys Cys Pro Lys Asp Val Phe Phe Gly Pro Lys Ile Ser
 80 85 90
 Phe Val Ile Pro Cys Asn Asn Gln
 95

<210> 617
 <211> 2558
 <212> DNA
 <213> Homo Sapien

<400> 617
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 cagcctgcag ggctgataag cgaggcatta gtgagattga gagagacttt 100
 accccgccgt ggtggttga gggcgcgag tagagcagca gcacaggcgc 150
 ggggtcccggg aggccggctc tgctcgcgcc gagatgtgga atctccttca 200
 cgaaaccgac tcggctgtgg ccaccgcgcg ccgcccgcgc tggctgtgcg 250
 ctggggcgct ggtgctggcg ggtggcttct ttctcctcgg cttcctcttc 300

tggttttcca acgacttgga attgcttcag gcagagcacg gtataactaaa 1800
aattgggaaa caaacaatt cagcggctat ccaactgtatc acagtgtcta 1850
tgaaacatat gagttggtgg aaaagtttta tgatccaatg tttaaatatac 1900
acctcactgt ggcccagggt cgaggagga tggtgtttga gctagccaat 1950
tccatagtgc tcccttttga ttgtcgagat tatgctgtag ttttaagaaa 2000
gtatgctgac aaaatctaca gtatttctat gaaacatcca caggaaatga 2050
agacatacag tgtatcattt gattcacttt tttctgcagt aaagaatttt 2100
acagaaattg cttccaagtt cagtgcagaga ctccaggact ttgacaaaag 2150
caaccaata gtattaagaa tgatgaatga tcaactcatg tttctggaaa 2200
gagcatttat tgatccatta gggttaccag acaggccttt ttataggcat 2250
gtcatctatg ctccaagcag ccacaacaag tatgcagggg agtcattccc 2300
aggaatttat gatgctctgt ttgatattga aagcaaagtg gacccttcca 2350
aggcctgggg agaagtgaag agacagattt atgttgcagc cttcacagtg 2400
caggcagctg cagagacttt gagtgaagta gcctaagagg atttttttaga 2450
gaatccgtat tgaatttgtg tggatatgtca ctcagaaaga atcgtaatgg 2500
gtatattgat aaattttaaa attggtatat ttgaaataaa gttgaatatt 2550
atatataa 2558

<210> 618
<211> 750
<212> PRT
<213> Homo Sapien

<400> 618
Met Trp Asn Leu Leu His Glu Thr Asp Ser Ala Val Ala Thr Ala
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Arg Arg Pro Arg Trp Leu Cys Ala Gly Ala Leu Val Leu Ala Gly
20 25 30
Gly Phe Phe Leu Leu Gly Phe Leu Phe Gly Trp Phe Ile Lys Ser
35 40 45
Ser Asn Glu Ala Thr Asn Ile Thr Pro Lys His Asn Met Lys Ala
50 55 60
Phe Leu Asp Glu Leu Lys Ala Glu Asn Ile Lys Lys Phe Leu His
65 70 75
Asn Phe Thr Gln Ile Pro His Leu Ala Gly Thr Glu Gln Asn Phe
80 85 90

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Gln | Leu | Ala | Lys | Gln | Ile | Gln | Ser | Gln | Trp | Lys | Glu | Phe | Gly | Leu | | 95 | 100 | 105 |
| Asp | Ser | Val | Glu | Leu | Ala | His | Tyr | Asp | Val | Leu | Leu | Ser | Tyr | Pro | | 110 | 115 | 120 |
| Asn | Lys | Thr | His | Pro | Asn | Tyr | Ile | Ser | Ile | Ile | Asn | Glu | Asp | Gly | | 125 | 130 | 135 |
| Asn | Glu | Ile | Phe | Asn | Thr | Ser | Leu | Phe | Glu | Pro | Pro | Pro | Pro | Gly | | 140 | 145 | 150 |
| Tyr | Glu | Asn | Val | Ser | Asp | Ile | Val | Pro | Pro | Phe | Ser | Ala | Phe | Ser | | 155 | 160 | 165 |
| Pro | Gln | Gly | Met | Pro | Glu | Gly | Asp | Leu | Val | Tyr | Val | Asn | Tyr | Ala | | 170 | 175 | 180 |
| Arg | Thr | Glu | Asp | Phe | Phe | Lys | Leu | Glu | Arg | Asp | Met | Lys | Ile | Asn | | 185 | 190 | 195 |
| Cys | Ser | Gly | Lys | Ile | Val | Ile | Ala | Arg | Tyr | Gly | Lys | Val | Phe | Arg | | 200 | 205 | 210 |
| Gly | Asn | Lys | Val | Lys | Asn | Ala | Gln | Leu | Ala | Gly | Ala | Lys | Gly | Val | | 215 | 220 | 225 |
| Ile | Leu | Tyr | Ser | Asp | Pro | Ala | Asp | Tyr | Phe | Ala | Pro | Gly | Val | Lys | | 230 | 235 | 240 |
| Ser | Tyr | Pro | Asp | Gly | Trp | Asn | Leu | Pro | Gly | Gly | Gly | Val | Gln | Arg | | 245 | 250 | 255 |
| Gly | Asn | Ile | Leu | Asn | Leu | Asn | Gly | Ala | Gly | Asp | Pro | Leu | Thr | Pro | | 260 | 265 | 270 |
| Gly | Tyr | Pro | Ala | Asn | Glu | Tyr | Ala | Tyr | Arg | Arg | Gly | Ile | Ala | Glu | | 275 | 280 | 285 |
| Ala | Val | Gly | Leu | Pro | Ser | Ile | Pro | Val | His | Pro | Ile | Gly | Tyr | Tyr | | 290 | 295 | 300 |
| Asp | Ala | Gln | Lys | Leu | Leu | Glu | Lys | Met | Gly | Gly | Ser | Ala | Pro | Pro | | 305 | 310 | 315 |
| Asp | Ser | Ser | Trp | Arg | Gly | Ser | Leu | Lys | Val | Pro | Tyr | Asn | Val | Gly | | 320 | 325 | 330 |
| Pro | Gly | Phe | Thr | Gly | Asn | Phe | Ser | Thr | Gln | Lys | Val | Lys | Met | His | | 335 | 340 | 345 |
| Ile | His | Ser | Thr | Asn | Glu | Val | Thr | Arg | Ile | Tyr | Asn | Val | Ile | Gly | | 350 | 355 | 360 |
| Thr | Leu | Arg | Gly | Ala | Val | Glu | Pro | Asp | Arg | Tyr | Val | Ile | Leu | Gly | | 365 | 370 | 375 |
| Gly | His | Arg | Asp | Ser | Trp | Val | Phe | Gly | Gly | Ile | Asp | Pro | Gln | Ser | | | | |

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 380 | | 385 | | 390 |
| Gly Ala Ala Val | Val His Glu Ile Val | Arg Ser Phe Gly Thr | Leu | | |
| | 395 | 400 | 405 | | |
| Lys Lys Glu Gly | Trp Arg Pro Arg Arg | Thr Ile Leu Phe Ala | Ser | | |
| | 410 | 415 | 420 | | |
| Trp Asp Ala Glu | Glu Phe Gly Leu Leu | Gly Ser Thr Glu Trp | Ala | | |
| | 425 | 430 | 435 | | |
| Glu Glu Asn Ser | Arg Leu Leu Gln Glu | Arg Gly Val Ala Tyr | Ile | | |
| | 440 | 445 | 450 | | |
| Asn Ala Asp Ser | Ser Ile Glu Gly Asn | Tyr Thr Leu Arg Val | Asp | | |
| | 455 | 460 | 465 | | |
| Cys Thr Pro Leu | Met Tyr Ser Leu Val | His Asn Leu Thr Lys | Glu | | |
| | 470 | 475 | 480 | | |
| Leu Lys Ser Pro | Asp Glu Gly Phe Glu | Gly Lys Ser Leu Tyr | Glu | | |
| | 485 | 490 | 495 | | |
| Ser Trp Thr Lys | Lys Ser Pro Ser Pro | Glu Phe Ser Gly Met | Pro | | |
| | 500 | 505 | 510 | | |
| Arg Ile Ser Lys | Leu Gly Ser Gly Asn | Asp Phe Glu Val Phe | Phe | | |
| | 515 | 520 | 525 | | |
| Gln Arg Leu Gly | Ile Ala Ser Gly Arg | Ala Arg Tyr Thr Lys | Asn | | |
| | 530 | 535 | 540 | | |
| Trp Glu Thr Asn | Lys Phe Ser Gly Tyr | Pro Leu Tyr His Ser | Val | | |
| | 545 | 550 | 555 | | |
| Tyr Glu Thr Tyr | Glu Leu Val Glu Lys | Phe Tyr Asp Pro Met | Phe | | |
| | 560 | 565 | 570 | | |
| Lys Tyr His Leu | Thr Val Ala Gln Val | Arg Gly Gly Met Val | Phe | | |
| | 575 | 580 | 585 | | |
| Glu Leu Ala Asn | Ser Ile Val Leu Pro | Phe Asp Cys Arg Asp | Tyr | | |
| | 590 | 595 | 600 | | |
| Ala Val Val Leu | Arg Lys Tyr Ala Asp | Lys Ile Tyr Ser Ile | Ser | | |
| | 605 | 610 | 615 | | |
| Met Lys His Pro | Gln Glu Met Lys Thr | Tyr Ser Val Ser Phe | Asp | | |
| | 620 | 625 | 630 | | |
| Ser Leu Phe Ser | Ala Val Lys Asn Phe | Thr Glu Ile Ala Ser | Lys | | |
| | 635 | 640 | 645 | | |
| Phe Ser Glu Arg | Leu Gln Asp Phe Asp | Lys Ser Asn Pro Ile | Val | | |
| | 650 | 655 | 660 | | |
| Leu Arg Met Met | Asn Asp Gln Leu Met | Phe Leu Glu Arg Ala | Phe | | |
| | 665 | 670 | 675 | | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Asp | Pro | Leu | Gly | Leu | Pro | Asp | Arg | Pro | Phe | Tyr | Arg | His | Val |
| | | | | 680 | | | | | 685 | | | | | 690 |
| | | | | | | | | | | | | | | |
| Ile | Tyr | Ala | Pro | Ser | Ser | His | Asn | Lys | Tyr | Ala | Gly | Glu | Ser | Phe |
| | | | | 695 | | | | | 700 | | | | | 705 |
| | | | | | | | | | | | | | | |
| Pro | Gly | Ile | Tyr | Asp | Ala | Leu | Phe | Asp | Ile | Glu | Ser | Lys | Val | Asp |
| | | | | 710 | | | | | 715 | | | | | 720 |
| | | | | | | | | | | | | | | |
| Pro | Ser | Lys | Ala | Trp | Gly | Glu | Val | Lys | Arg | Gln | Ile | Tyr | Val | Ala |
| | | | | 725 | | | | | 730 | | | | | 735 |
| | | | | | | | | | | | | | | |
| Ala | Phe | Thr | Val | Gln | Ala | Ala | Ala | Glu | Thr | Leu | Ser | Glu | Val | Ala |
| | | | | 740 | | | | | 745 | | | | | 750 |

<210> 619

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 619

agatgtgaag gtgcaggtgt gccg 24

<210> 620

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 620

gaacatcagc gctcccggta attcc 25

<210> 621

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 621

ccagcctttg aatggtacaa aggagagaag aagctcttca atggcc 46

<210> 622

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 622

ccaaactcac ccagtgagtg tgagc 25

1001001-1001001

<210> 623
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 623
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<210> 624
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide probe

<400> 624
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